PAPER TRADE JOURNAL

FEBRUARY 2, 1959

Size Presses and Calender Treatments Featured at Western Michigan U.

A Look Ahead for Paper and Board and a Review of 1958 Production

New Mills and Machines Started in 1958—plans for 1959

Geigy

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Ann Arbor, Mich.

GEIGY takes a new approach to blue and green bond and printing papers.

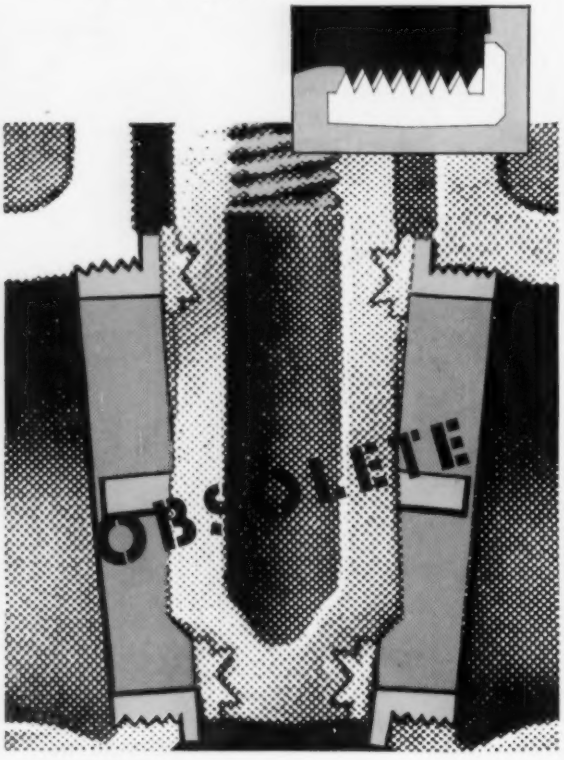
See Page 4

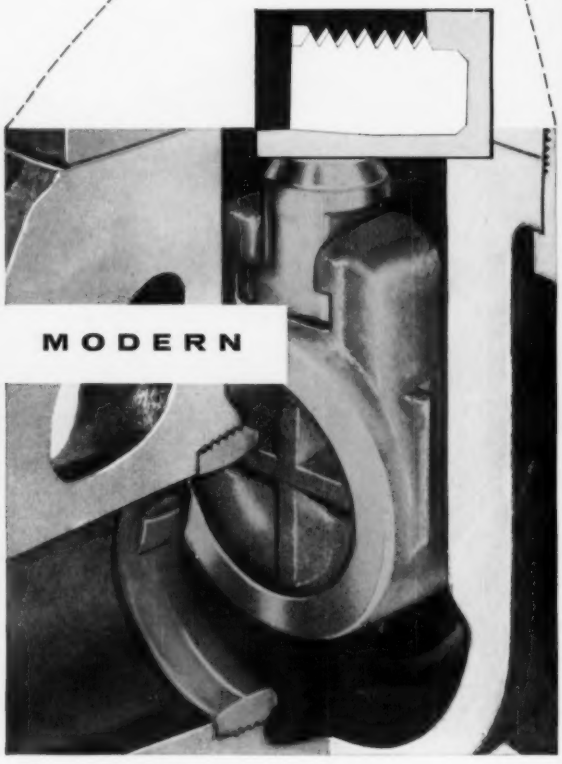
ARE YOUR TRIM SPECS UP TO DATE?

Put an end to iron valve seat ring and stem-wedge problems. Make sure your specifications call for modern, trouble-free OIC end-seated seat rings and T-head stems.

There is no extra cost and yet this superior design will reduce your maintenance overhead many times.

For specification details write for OIC Iron Valve Bulletin No. 1005. The Ohio Injector Co., Wadsworth, Ohio.





Shoulder-seated rings
Screwed stem-wedge connection

Ring design causes turbulence. Open back of ring is easily eroded. Ring is seated in tension. Continuous operation compresses and tends to loosen it, developing serious leaks.

A screwed stem-wedge connection is rigid. Closing valve under pressure tends to bind wedge, make closing difficult and perhaps bend the stem.

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T-head, stem-wedge connection

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- ★ Container Corporation of America
- ★ Continental Can Company, Inc.
- ★ International Paper Company
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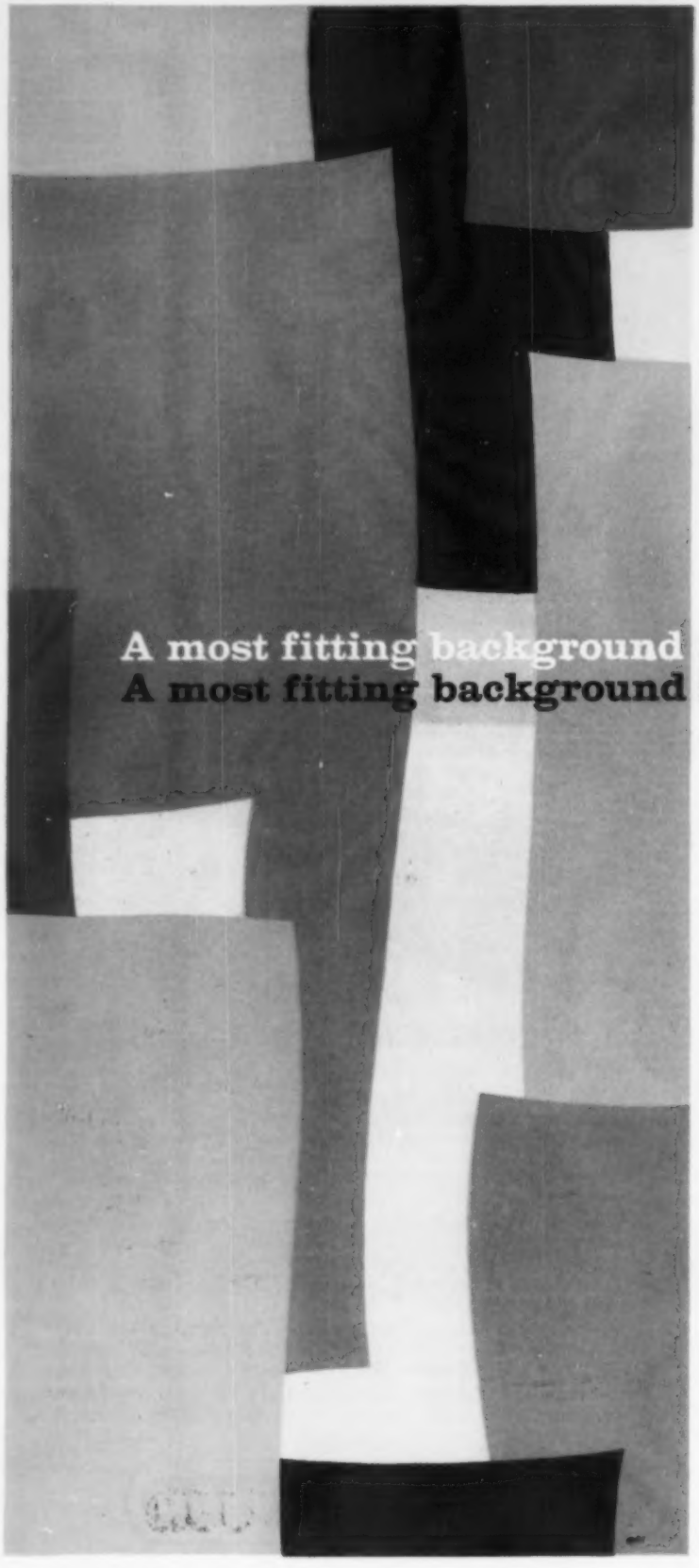

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Solophenyl® Blue 8GL

A low cost direct blue with the necessary fastness properties for fine papers.

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Use the above two blues as a base for blue shades or in conjunction with

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REMEMBER THESE DATES

Feb. 23-26, 1959: Paper Week in New York

March 8-11, National Paper Trade Ass'n., Annual Meeting, Waldorf-Astoria Hotel, N. Y.

June 2-4, American Pulp and Paper Mill Superintendent's Ass'n., National Meeting at the Shamrock Hilton Hotel, Houston, Texas.

SUBSCRIPTIONS →

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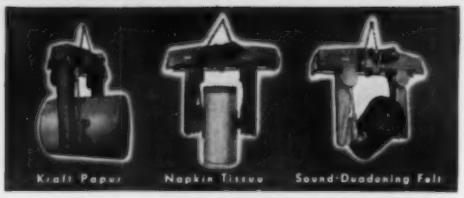
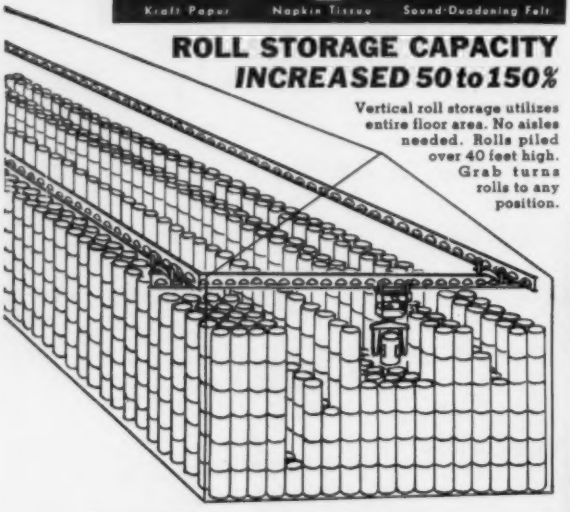


HANDLING IN THE PAPER INDUSTRY

● Many paper mills and paper products plants are enjoying numerous advantages possible with Cleveland Tramrail. They are speeding production and lowering costs by eliminating rehandling. They are reducing floor congestion and removing hindrances and confusion. They are aiding safety. They are using overhead space to save floor space. They are reducing spoilage and greatly increasing warehouse capacity by eliminating need of aisles and piling higher.

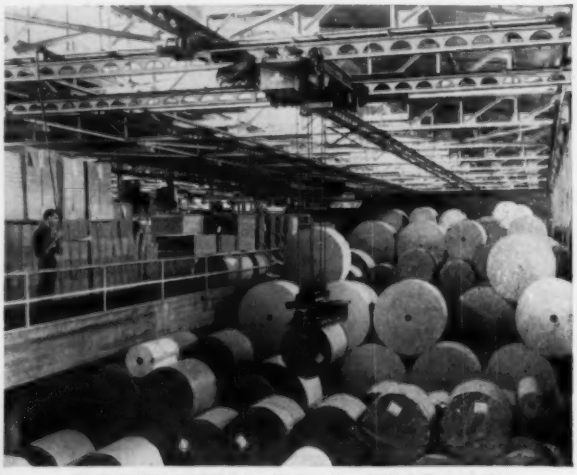


ROLL STORAGE CAPACITY *INCREASED 50 to 150%*

Vertical roll storage utilizes entire floor area. No aisles needed. Rolls piled over 40 feet high. Grab turns rolls to any position.

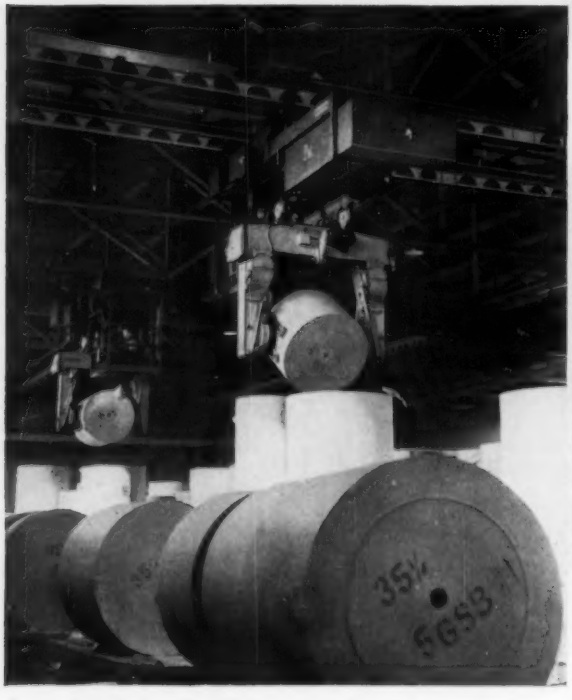
VERTICAL ROLL STORAGE

From 50 to 150% more rolls can be stored in a building when served by a Cleveland Tramrail crane and motor-driven roll grab. One man can usually take care of entire storage and handling job from the crane cab. Paper spoilage often reduced as much as 1% of all handled.



HORIZONTAL ROLL STORAGE

One operator with this floor-operated Tramrail crane and motorized grab can handle all rolls in and out of storage without assistants. This cuts man-hours of handling time. Roll damage due to crushed edges, cuts, tears, is also reduced. Storage capacity is increased.



SCREW-GRAB PULP HANDLING

200 tons of pulp are easily handled in an 8-hour day with a Tramrail crane and screw grab. Screws worked into the pulp hold heavy bales solidly. This method saves time and increases pounds stored per square foot because aisleways are not necessary. Safety is improved.

As it has from its inception, the Huber, Ga., laboratory maintains a close relationship with customers through our Technical Service department. As our Georgia operations—and service to our customers—have grown, our laboratory has been enlarged to provide ever better service.

The largest of the Huber Paper Laboratory expansions was recently completed. The laboratory is equipped and manned to conduct the same kind of work that our customers perform in their own laboratories. We duplicate all of the essential stages of paper making from sheet to finished filled or coated paper.

If you would like to learn how the Huber Paper Laboratories can improve *your* product, we will be glad to sit down and discuss it with you.

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Photo courtesy Patent Scaffolding Co.

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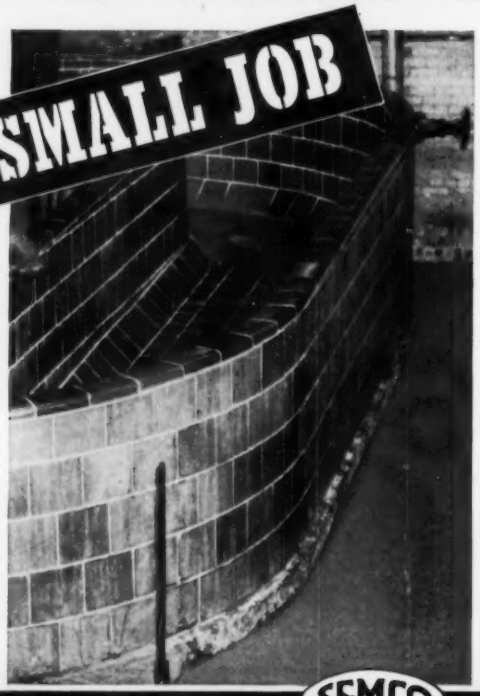

Any job—from the very largest to the smallest—can be installed by Stebbins under a simple contract which covers everything from the original design, which is based on a full knowledge of the chemical, physical and mechanical requirements, to the finished job ready for use. Maintenance can also be included. As proved by the experience of leading mills throughout the country, you can rely completely on Stebbins service.

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Trends

Paper and Board Operating Rates

During the first three weeks of January the operating rate for paper mills was slightly higher than for the same period last year, while board mills ran fractionally lower than in the first three weeks of 1958.

Reviewing Output For Last Year

Total pulp production last year was off only 1% from 1957. However production of market pulp was off 10%. Paper board output managed to top the previous year's figure by about one per cent while paper production was almost the same as in 1957. While total paper and board production was approximately the same as in 1957, it failed to reach the figure of the boom year, 1956, by about 2%.

Folding Boxes Jumped Last Month

A sharp upturn in folding box shipments in December improved the picture for the year but was not sufficient to carry output to the level of 1957. Total shipments for 1958 were off 1.3% in dollar volume and 2.3% in tonnage. December shipments were ahead of the last month in the previous year by 6.6% in dollar volume and by 6.5% in tonnage.

Paper Week to Feature Research

The growing interest and attention given to research by our industry in recent years finds a focus in a "Paper Week" special program this February. For the first time management and technical men are meeting in a joint session, sponsored by APPA and TAPPI, called "Research Forum."

1959 Output To Be Up 8%

Pulp, paper, and board output in 1959 will run about 8% ahead of last year according to the predictions in our Review and Forecast feature in this issue. The article discusses the outlook for different grades of paper and board.

Newsprint Production Down in 1958

Newsprint production in North America last year was 4.5% below the historical high set in 1957. United States output was down 3.7% and Canadian production was down 4.7%. However December North American production was 8.2% above the same month in the previous year.

Strike Frequency Rate Rising

We seem to be having more strikes at our mills in recent months, than we ordinarily have in a year. This hardly seems a good sign for the big bargaining season ahead.

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PJT PAPER TRADE JOURNAL

WEEK OF FEBRUARY 2, 1959

Paper Making Film Available

A new feature film depicting the development of a paper making community has just been released by the P. H. Glatfelter Co. entitled, "The Power of Paper," the film uses the techniques of color, sound and animation to bring to life a fascinating story.

Such significant events as the invention of paper by Ts'aiLun, in 105 A.D.; the discovery of rag fibers as a paper making substance and the invention of printing press by Gutenberg are just a few of the historical incidents shown in animation form. The camera covers the many processes of paper making including tree farming, pulp preparation, paper manufacturing and distribution as well as a tour of the Glatfelter Mill.

"The Power of Paper," running 27 minutes on 16 MM sound film, is available free of charge, to schools, clubs and other institutions. Requests should be directed to Film Service, P. H. Glatfelter Co., Spring Grove, Pa.

Victoria Paper Mills Bought

The Victoria Paper Mills Co. which has operated in Fulton, N. Y. for more than half a century was sold at bankruptcy sale January 14 and 15, 1959.

About 250 people attended the sale, the contents of the mill and the real estate was offered as an operating unit, and in lots, and was disposed of bringing a total of approximately $252,000, the sale being confirmed in Bankruptcy Court in Utica, N. Y., on Friday, January 16.

The real estate and four paper machines along with a major part of the equipment was sold to the Osborne Paper Mill Equipment Corp. of Fulton, N. Y. Mark Osborne, president of the Corporation advised that he did not purchase the mill for operation, and that unless a customer could be found shortly, all equipment would be liquidated.

Buckeye Plant Sets World Safety Record

The Memphis pulp plant of the Buckeye Cellulose Corp., has set a new world's record for the pulp and paper industries by operating since January 22, 1956 without a lost-time accident. This feat surpasses the former industry record of 3,770,086 man-hours, which was set several years ago by the Dixie Cup Co., at Easton, Pa. In recognition of this accomplishment, the Buckeye plant will receive a National Safety Council Award of Honor.

Puget Installing SWL Dryer

As a major part of a $400,000 expansion program at Bellingham, Wash., Puget Sound Pulp & Timber Co. will install a 100,000-lb.-a-day capacity spray dryer for the production of sulphite waste liquor by-products. The dryer will be supplied by Bowen Engineering Inc. of North Branch, N. J., and will incorporate a Bowen-patented design which allows introduction of cooling air into the drying chamber to cool the product prior to leaving the unit.

Paper and Board Production

According to the American Paper and Pulp Assn., the ratio of the United States production to mill capacity for the week ending January 17, 1959, was 89.8 per cent compared with 90.6 per cent revised for the preceding week. The ratio was 89.1 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending January 17, 1959, was 93 per cent compared with 78 per cent for the preceding ten-day period (ending January 10, 1959) and 90 per cent for the week ended January 18, a year ago.

(Detailed statistics on page 52.)

Sonoco Sells Wholesale Paper Interests

The wholesale paper department of National Paper Co., Atlanta, Ga., has been acquired by Wyant & Sons Paper Co. of the same city. Sonoco Products Co., in 1957 acquired National's threefold operation of box manufacturing, cone and tube manufacturing, and industrial packaging. It is the latter operation which Wyant & Sons has acquired. National Paper Co., will henceforth be operated as a division of Wyant & Sons Paper Co. Sonoco Products meanwhile will further expand its folding box and paper tube operation in Atlanta and Bolton, Ga.

NA Newsprint Production Off Last Year

Production of newsprint in North America during December, 1958 amounted to 620,946 tons and was 8.2 per cent above the December, 1957 volume. Shipments totaled 643,074 tons in December, 1958 and were 6.0 per cent greater than shipments in the corresponding month of 1957. According to the Newsprint Service Bureau, output in the United States was 144,714 tons and shipments were 148,821 tons, and respective increases from December, 1957 amounted to 4.3 per cent and 10.2 per cent. Canadian production amounted to 476,232 tons and shipments totaled 494,253 tons, which represents an increase of 9.4 per cent in output over the December, 1957 volume which had been reduced by a strike in the British Columbia mills, while shipments recorded a gain of 4.9 per cent.

Production of newsprint paper in North America in 1958 amounted to 7,853,349 tons, which was 369,049 tons or 4.5 per cent below the historical high attained in 1957. United States mills produced 1,757,796 tons or 68,101 tons and 3.7 per cent below the all-time high reached in 1957. Output in Canada amounted to 6,095,553 tons and was 300,948 tons or 4.7 per cent under the volume produced in 1957.

Hinde & Dauch Organization Decentralized

C. D. Sparks

The Hinde & Dauch division of West Virginia Pulp and Paper Co., is being decentralized to provide an organization for continuing growth, it was announced by L. Frank Thompson, manager of the division.

The program calls for the formation of four regional organizations headquartered at New York, Chicago, Sandusky and Richmond, Va., headed by managers who will coordinate the sales, production and administrative functions in all plants and sales areas of their regions.

The new plan also creates three staff managers at division headquarters in Sandusky who will be responsible for coordinating manufacturing, administration and marketing services for the entire division. The new organization became effective Feb. 1.

G. T. Henderson

J. B. Wyatt

The region headquarters at Chicago, encompassing the operations and sales of the H & D box factories at Chicago, St. Louis and Kansas City, Kan., will be managed by Charles D. Sparks, presently western sales vice-president. The region headquarters at Sandusky, covering the Sandusky, Cleveland, Detroit and Eaton, Ohio box factories and sales territories, will be managed by George T. Henderson.

The region with headquarters in the New York area will be managed by John B. Wyatt, eastern sales vice-president, Mr. Wyatt's region covers the operation of the Watertown, Mass., Meriden, Conn., Hoboken, N. J., Gloucester, N. J. and Buffalo, N. Y., plants and the sales territories of these operations.

Louis R. Lawson, Jr., eastern district sales manager of kraft paper sales for West Virginia Pulp and Paper, will be manager of the region headquartered at Richmond, Va. This region will cover the Richmond, Baltimore and Gastonia, N. C., box factories and sales territories. Mr. Lawson will assume his new duties on April 1, at which time he will announce his staff organization. During the interim period Mr. Wyatt, regional manager with headquarters in the New York area, also will be responsible for operations in the region headquartered in Richmond.

L. R. Lawson Jr.

N. F. Janson

Nils F. Janson will be manager of manufacturing services.

William E. Richardson, secretary of H & D, will be manager of administration services,

William F. Westerhold, will be manager of marketing services.

As manager of administration services, William E. Richardson's staff will include Bruce G. McAbery, personnel manager; John R. Rheinegger, manager of accounting and cash flow; Gerald J. Swank, purchasing agent, and Alvin C. Reckinger, general traffic manager.

W. E. Richardson

W. F. Westerhold

The manufacturing services staff, managed by Nils F. Janson, will include John R. Little, chemical engi-

neer in charge of quality control, who will be manager of the central testing and development laboratory, and Edgar A. Miller, general manager of factory production at Sandusky, who will be manager of machinery and equipment services. The position of industrial engineer has not been filled.

The staff of William F. Westerhold will include Richard S. Aldrich, advertising and public relations manager; Richard G. Alexander, market research manager, and Harold Zeitzheim, art director. The position of sales training director will be filled later.

Scott to Spend $7 Million on Warehouses

Scott Paper Co. has announced plans for a multi-million dollar warehouse expansion program designed principally to combat increasing expenditures arising from the distribution of many new brands.

New warehousing facilities will be built in Chester, Pa., Detroit, Mich., and Everett, Wash., at a total cost—including equipment—of about $7 million. These structures will provide the company with about 770,000 more square footage for warehousing than is currently available.

Plans call for the Detroit and Everett installations to be completed sometime late in the year. At Chester, a sizeable addition will be made to the existing shipping center, and completion of this construction is expected early in 1960.

Brand diversification and a new sales policy of loading railroad cars with a number of different brands figured prominently in the company's decision to expand its current warehouse facilities. This diversification includes the use of color in many of its brands, the manufacture of new products and changes in packaging, all of which have contributed to increasing distribution costs. In addition, color utilization not only has added a considerable number of brands to the Scott line, but it has also resulted in the need to pack cases in color assortments proportionate with consumer demands.

All of these factors, therefore, have increased the complexity of inventories with respect to the company's full line of products. Substantially greater warehouse space has become necessary to enable Scott to give prompt and efficient service.

The Chester addition will be a two-story building providing 320,000 more square feet for warehousing, and the Detroit shipping center will make available about 170,000 square feet, all on one floor. Everett's new warehouse, a three-story structure, will provide about 280,000 square feet.

A considerable degree of automation is planned for these centers. This will include expanding the use of the electric-eye selector system on the conveyors. This system already has been adapted and refined by Scott to handle the company's large number of brands.

Cooper Heads Paper Advisory Group

Bert H. Cooper, vice president of the Kalamazoo Paper Co., was elected chairman of the advisory committee on paper technology, as the group held its annual meeting at the conclusion of the third annual Pulp and Paper Conference at Western Michigan University.

Mr. Cooper succeeds Dwight L. Stocker, president of the KVP Co., as the chairman, and had previously held the same post during another term on the committee.

Named as vice chairman is L. D. Nicholson, vice president and general manager of the Michigan division, Hamilton Paper Co., Plainwell. Dr. A. H. Nadelman, head of the WMU paper technology department, continues as secretary.

Newly-elected to the committee are Earnest E. Ludwig, vice president and resident manager of the Bermingham-Prosser Co., Kalamazoo, and Ward D. Harrison, president of the Allied Paper Corp., Kalamazoo, and president of the TAPPI.

Leaving the committee at the completion of their terms are Stocker, and Dr. J. J. Harrison, vice president, Michigan Carton Co., Battle Creek.

Officers Installed At Salesmen's Ass'n.

The Salesmen's Ass'n of Paper & Allied Industries, Inc. held their annual installation dinner at the Belmont Plaza Hotel on January 5. The installation was handled by the organization's counsel, Mr. Rothstein.

The presidents, or their representatives, of the Metropolitan Bag & Paper Distributors Ass'n, the Interboro Jobbers Ass'n and the Cosmopolitan Paper & Twine Ass'n were invited guests.

The following officers were installed for the year of 1959:

President, John Gumina of Resolute Paper Products.

Vice President, Jerome Rosenberg of Schrier Brothers.

Secretary, David Rosenthal of Lily Tulip Cup Corp.

Treasurer, Max Grindlinger of Standard Bag Corp.

A Board of Governors of seven members were also duly installed and they were composed of:

Clarence Jacobsen, Sanitary Products.

Irving Frosch, Stevens & Thompson Paper Co.

Harold Hochstein, Quaker Wax Paper.

Max Janofsky, Standard Bag Corp.

Milt London, Royal Lace.

Sol Schoenbach, Park Tissue Corp.

M. Schlanger, Penn Wax Works.

Change Miami Valley Supts Meeting

The Miami Valley Division of Supts. Ass'n. is changing the date of its February meeting from February 26th to Thursday, February 19th. They are doing this so there will be less conflict with the paper conventions being held in New York the week of February 22. George Hill of Miami University is speaking on the subject of "Motivation."

Continental-Diamond Plans Research Center

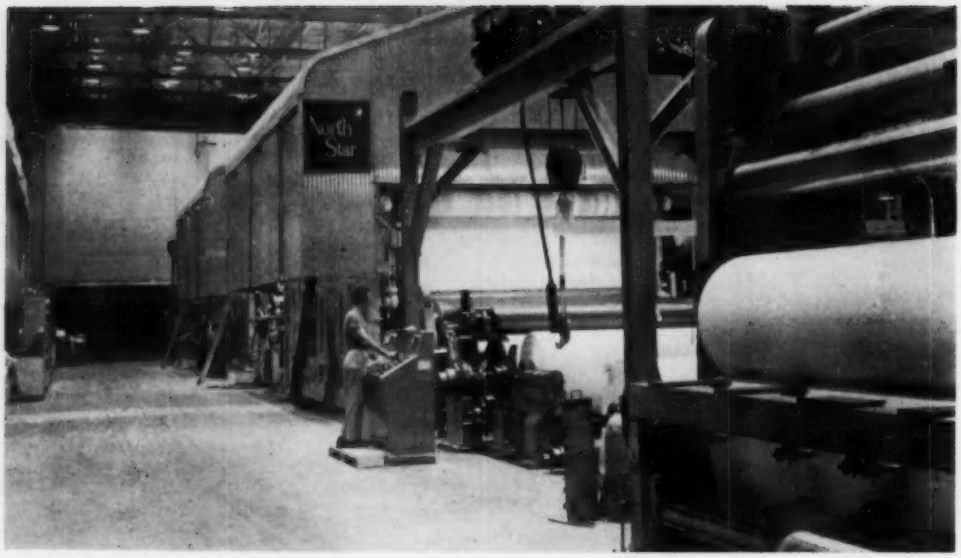
H. K. Collins, vice president and general manager of the Continental-Diamond Fibre Corp., a subsidiary of the Budd Co., has announced plans for a $350,000 research center to be located at its Newark, Del., plant.

The firm, which manufactures laminated and molded plastics will centralize its entire research effort at this new facility. Mr. Collins said today that space will be cleared in the Newark plant to add to the research center area. No wing will be built.

The present research area will be enlarged two and a half times, the research staff will be significantly increased and much additional laboratory equipment will be purchased. The contract for construction and renovation of the research area has been awarded to the Gilmore-Olson Co. of Cleveland.

P & G Forms Subsidiary

Procter & Gamble announce formation of the Charmin Distributing Co., with headquarters in Cincinnati, as a subsidiary responsible for sale and delivery of household and industrial paper products.



The new North Star coater recently installed at Oxford Paper Co., Rumford, Maine, is equipped with a Rice Barton trailing blade coater and Gardner dryer.

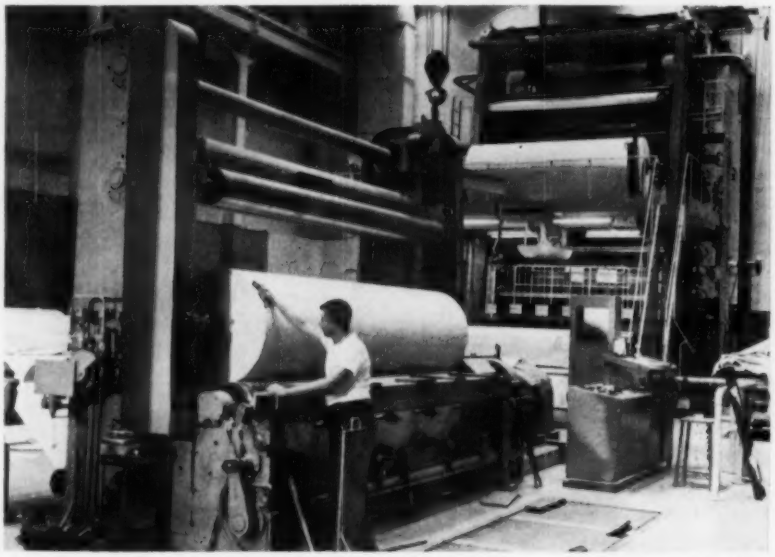
Oxford's New Line of Coated Papers

At a meeting held last week at the Sheraton-East Hotel in New York for approximately 150 of its distributor's salesmen from the New York area, Oxford Paper Co. launched its completely new line of North Star coated papers. The new line, including both letterpress and offset papers in high-gloss and dull finish, states Oxford, is the first complete line of top-quality coated papers produced by the trailing blade process.

"The trailing blade method of coating papers," said Harold M. Annis, vice-president, research and development, of Oxford, "is the greatest advance in paper making in more than twenty years. It produces a levelness of surface that cannot be equalled by conventional coating methods. We believe the levelness obtained on the trailing blade, together with the fact that the surface requires less supercalendering, produces a sheet of paper that looks better and prints better than any conventionally coated paper."

North Star coated papers are the result of seven years of development and an investment of over $6.5 million dollars. The North Star coater, located at the Rumford, Maine, mill, is an off-the-machine coater for greater flexibility and speed. It is wide enough to take base paper from any machine in the mill. The coater is designed to run at speeds ranging from 200 to better than 2,000 feet a minute. Supplementing the North Star coater, Oxford has installed additional facilities and equipment for roll storage, trimming, mechanical sheet inspection and carton and skid packing. In addition, "C" Machine, one of the largest paper machines at Rumford, was completely rebuilt in 1957 to serve as a primary source of coating base paper for the North Star Coater.

"North Star coated papers will be distributed through stocking merchants only," reported Andrew M. McBurney, vice-president, sales. "They will be sold under the advertised brand names, Polar, Mainefold and Maineflex. We are beginning to ship paper to our stocking merchants the week of January 19, 1959. We are introducing North Star Coated Papers in New York, Chicago and Boston the same week, and will follow through in other major cities immediately thereafter."



Cameron rewinder cuts rolls from North Star coater into smaller rolls for sheeting and trimming. New Rice-Barton Eck supercalender (right rear) gives high gloss to the new papers.

D G Superintendent Retires After 58 Years

It makes sense to remove "junk" BEFORE it gets broken up to become "dirt"

THE BIRD CENTRIFFLER

is the modern, low cost way to do it

The Bird Centriffler takes out paper clips, rubber, wood, metal, glass, etc. *before* they get into the papermaking system . . . *before* they can damage equipment . . . *before* they get broken up and become harder and more costly to remove.

Far more compact and efficient than the old, cumbersome riffler, the Centriffler takes stock diluted to about 1½% and delivers up to 1500 gallons of cleaned stock per minute. Write for recommendations and estimates.

Bird Centrifflers take stock delivered by a low head pump or by gravity feed. They are also available for high pressure (50 lb.) stock discharge so that stock can be delivered to regular drop-in-pressure dirt removers without pumping. Dirt may be removed by operating a hand lever or by the automatic dumping device shown above.

BIRD MACHINE COMPANY

SOUTH WALPOLE, MASS.

REGIONAL OFFICES: EVANSTON, ILLINOIS
PORTLAND, OREGON • ATLANTA, GEORGIA

Canadian Manufacturers of Bird Machinery
CANADIAN INGERSOLL-RAND COMPANY, Limited, Montreal

sponsibilities of his function will in-

PAPER PEOPLE

St. Lawrence Corp. Appointments

Two senior appointments have been made by St. Lawrence Corp., Montreal. W. S. Cramp will be manager of the research and technical services department and will be located at the corporation's head office in Montreal. W. K. Hastey will assume the duties of resident manager of the corporation's Three Rivers newsprint mill. Mr. Cramp was formerly the resident manager at Three Rivers and Mr. Hastey was the assistant manager. Three appointments have been made at St. Lawrence Corp.'s East Angus kraft specialty papers and boxboard mill. L. M. Morgan will be manager of the board mill. J. A. Tremblay will be production superintendent of the pulp mills and R. Pinard, production superintendent of the paper mills.

Beeman VP of Sanitary

Sanitary Paper Mills, Inc., East Hartford, Conn., announces that David E. Beeman has been appointed a director of the company and also elected vice-president.

Sanitary Paper Mills, Inc. is managed by Perkins-Goodwin Co. and Mr. Beeman is their resident manager. Mr. Beeman will continue to act as general manager of Sanitary Paper Mills, Inc. for the Perkins-Goodwin Co.

During 1958 the production capacity of Sanitary Paper Mills, Inc., was increased by the installation of a Morden slushmaker and improvements to their paper making machines. A new warehouse, including modern shipping facilities, was completed.

Buckeye's Pulp Plant Manager

Charles A. Montague Jr. has been named manager for Buckeye Cellulose Corp.'s pulp mill in Memphis.

Mr. Montague, with the firm since 1951,, succeeds Philip S. Moore Jr., transferred to Green Bay, Wisc., with Charmin, a subsidiary of Procter and Gamble.

Mr. Montague has worked as resident engineer and staff engineer at Buckeye plants in Memphis and Foley, Fla., where he helped in plant expansion.

T. W. Earle

Con. Can Establishes Woodlands Div.

Continental Can Co. has established a Woodlands Division in its Robert Gair Paper Products Group to manage its more than a million acres of timberlands in seven Southern states, Charles B. Stauffacher, group executive vice president, announced.

General manager of the new division is T. W. Earle of Savannah, Ga., who previously headed Continental's woodland operations in its Containerboard and Kraft Paper Division. The company's forests supply part of the pulpwood requirements of its kraft mills at Hopewell, Virginia; Port Wentworth, Georgia; and Hodge, Louisiana; and will also help supply a bleached foodboard mill on which construction is about to start at Augusta, Ga.

P. A. Jackson Retires

P. Andrew Jackson retired from active duty at Pusey & Jones December 31, 1958 after serving 12 years as field erector, consultant, and sales engineer.

Mr. Jackson's first paper mill experience dates back to 1906 with Du Pont Co.'s experimental pulp keg department. In 1907 he joined Pusey & Jones engineering department leaving there in 1917 to go with American Writing Paper Co. for 25 years, the last 16 in the capacity of chief engineer. He returned to Pusey & Jones after being with Erving Paper Mills for five years as vice-president in charge of engineering and production.

D G Superintendent Retires After 58 Years

John Ditmeyer, superintendent of Diamond Gardner Corp.'s Mill I in Middletown, Ohio, retired—after 58 years of service.

Mr. Ditmeyer was in his teens when he started in 1900 as a cutter boy, and the company was then the Colin Gardner Paper Co.

At the time of his retirement, Mr. Ditmeyer was the oldest person in length of service still regularly employed.

Bartosiewicz Appointed To Commerce Dept. Paper Staff

John J. Bartosiewicz has joined the pulp, paper, and paperboard staff of the Forest Products Division, BDSA, Department of Commerce, as program executive for paperboard.

His Federal career began in 1950 with the Federal Supply Service where he tested paper and paperboard for compliance with Federal specifications. He later saw service as an economist with the Office of Price Stabilization and, after that office was discontinued, as an inventory control coordinator for the Westinghouse Electric Corp.

Dr. Baldauf

New Research Mgr. at Allied

Dr. Gunther Baldauf was today appointed research manager of the Allied Paper Corp.

The announcement was made by Robert Levy, director of research and development of Allied, who advised that Dr. Baldauf will start working at the Kalamazoo Mills on February 2.

A graduate of the Massachusetts Institute of Technology, Dr. Baldauf has been the research chemical Engineer for the last ten years with the Ecusta Paper Division of the Olin-Mathieson Chemical Corp.

NEWS OF CONVERTERS

Capt. C. M. Tooke

W. S. Clark

Sealright Announces Changes

Captain C. M. Tooke has been elected executive vice president of Sealright-Oswego Falls Corp., a manufacturer of paper containers and milk bottle closures and W. S. Clark has been appointed director of planning, a newly created position, according to an announcement by H. C. Estabrook, president.

As executive vice president, Captain Tooke will coordinate the relationships between the various divisions of the company at Fulton, N. Y.; Kansas City and Los Angeles, as well as Canadian Sealright Co., Ltd., at Peterborough, Ontario. He is a graduate of the U.S. Naval Academy with the master's degree in engineering from M.I.T., and joined Sealright-Oswego Falls Corp., as assistant to the president.

As director of planning, Mr. Clark will consolidate various phases of long range planning relating to present and future products, the company's industrial relations, public relations, marketing research, and organizational planning. Mr. Clark is a graduate of the College of Business Administration at Syracuse University.

Captain Tooke and Mr. Clark are both directors of Sealright-Oswego Falls Corp. and Mr. Clark is assistant treasurer and assistant secretary of the corporation.

Dixie Lists Expansions

Key personnel and additional equipment have been added to the Dallas; Memphis, Tenn., and Burlingame, Calif., plants of Dixie Wax Paper Co., according to Louis T. Kimple, executive vice president of the Dallas based company.

A branch plant at Washington, N. J., will now be used as a regional office and warehouse, Mr. Kimple said.

Production will be centered in the Dallas and Memphis plants and their capacities will be increased. Expansion included completely staffed departments in product research and development, marketing planning, design responsibility and rotogravure technique.

An expanded distribution system with Dixie's transports will service the eastern area.

Sales Management Promotions

Three principal promotions in sales management for the Southern Packaging Division of Fibreboard Paper Products Corp. were announced.

W. F. Call was appointed sales manager—industrial packaging. He will be in charge of a group responsible for Southern Division sales of cartons and containers for industrial packaging. He had been Los Angeles District sales manager.

E. T. Creager was appointed sales manager—general packaging. His staff will be responsible for special account sales and industry specialized selling. The group's responsibility will include sales of both cartons and containers, but with emphasis on cartons.

L. E. Ellis was appointed sales manager—distributor packaging. Responsibilities of his function will include all distributor sales, fresh fruit and vegetables, and also the sales of the San Diego and Phoenix offices of the company. He had been sales manager—containers.

C-Z Div. Acquires New Facilities

Facilities for the manufacture of corrugated shipping containers in the Chicago area have been acquired by the Gaylord Container Corp. Division of Crown Zellerbach Corp. The one-story building is located at 5211 West 66th Street, Bedford Park, Cook County, Ill. The plant layout will be remodeled for Gaylord's production purposes and will also include the Chicago sales office.

In conjunction with this plant opening, the appointment of G. V. Sans Soucie as plant manager was announced. Mr. Sans Soucie joined Gaylord in 1945 as an industrial engineer and in 1952 was assigned as chief industrial engineer. In September, 1956, he was promoted to superintendent of the Milwaukee plant. William F. Worthington will continue as sales manager for the Chicago area.

The Chicago plant, when completed in the near future, will bring the number of Gaylord converting plants to 18.

Royal Register Appoints General Manager

R. Dexter Brown, president of the Royal Register Co., Nashua, N. H., has announced the appointment of Barton Christopher as general manager, effective immediately.

Mr. Christopher attended Southwestern University and M.I.T. in preparation for his career in printing sales and production.

Promotions at Mengel

The Mengel Co. has announced promotions of three employees at its Louisville headquarters offices. Macon M. Dalton was named to the newly created position of division engineer for the company's corrugated box division. He had been district manager for the past three years and prior to that had been superintendent of the corrugated box plant since 1948. James F. Tate, formerly district sales manager, succeeds Mr. Dalton as district manager, and Robert E. Guffy was advanced from sales representative to district sales manager. The Mengel Co. is a subsidiary of Container Corp. of America.

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FISHER SUPERMARKET

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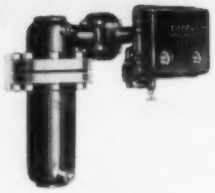
Type 657-A with 3500 positioner

Type 4150 and 4160 Wizard II Pressure Controllers



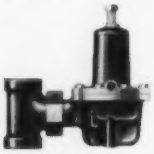
Series 2500-249 and 2500-259B Level-Trols

Type 95-H Pressure Reducing Valve

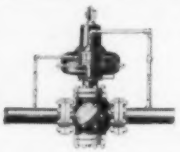
Type 630 "Big Joe" Field Regulator

Series 99 Multi-Purpose Gas Regulators

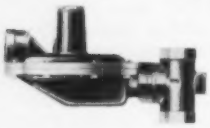
Type 655-A Pressure Regulator



Series 620 and 621 Farm Tap Regulators

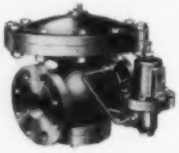


Series 298T Gas Regulators



Series S100 and 730 Service Regulators

Series 67FR Combination Filter-Regulator



Type 92B Pilot Operated Steam Reducing Valve

This "supermarket" availability of Fisher Control Valves and Controllers makes your delivery problems a thing of the past. Fisher keeps a stock of the equipment at left always on hand ready to ship to you at hourly notice. This means emergency requirements are met without costly delivery delays. This stock of control equipment includes all the most popular types in standard sizes.

In addition to the large factory stock, the Fisher offices in the column to the right which are starred carry a big selection of Fisher equipment in inventory to assist you.

Fisher constantly reviews the stock carried in the Supermarket and adds new items from time to time when your needs indicate.

Phone, wire or TWX (Marshalltown 578 or 579) and Fisher will have your order en route in a matter of hours, Saturday and Sunday excepted.

IF IT FLOWS THROUGH PIPE ANYWHERE IN THE WORLD... CHANCES ARE IT'S CONTROLLED BY...

FISHER GOVERNOR COMPANY

Marshalltown, Iowa / Woodstock, Ontario / London, England

CONTINENTAL EQUIPMENT CO. DIVISION, Coraopolis, Pennsylvania

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W. J. Sommers Company
*CALGARY-EDMONTON
Barber Engineering & Supply Company
CARACAS, VENEZUELA
Sinclair Spence
*CHARLOTTE
Robert E. Mason & Company
CHICAGO
General Meters & Controls Company
CINCINNATI
H. T. Porter Company
*CLEVELAND
A. E. Ehrke & Company
*DALLAS
Vinson Supply Company
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DuBois-Webb Company
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R. S. Stover Company
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Vinson Supply Company
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PHOENIX
Cone & Wallace Company
PITTSBURGH
J. G. Chilcoat & Company
PORTLAND
R. H. Brown & Company
RICHMOND
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SALT LAKE CITY
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Power & Controls, Inc.
*SHREVEPORT
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TORONTO
George W. Beecroft & Company
*TULSA
Vinson Supply Company
VANCOUVER
Northern Columbia Process Equipment Company
*WICHITA–LIBERAL
Sullivan-Mears Company
WINNIPEG
Mechanical Valve & Engineering Spec.

Fox of Sutherland Becomes Sales Mgr

James H. Fox, packaging specialist at Sutherland, will become sales manager of the company's subsidiary, Fort Orange Paper Co., on Feb. 1. Fort Orange is located in Castleton-on-Hudson, N. Y.

A member of Sutherland's dry carton division of sales since 1950, Mr. Fox has specialized in customer services.

Lab Coater from W. Germany

Jagenberg-Werke AG of Duesseldorf, West Germany, have released for distribution in the U. S. A., their new 12-inch wide laboratory coater with air knife and smoothing rolls, drying chamber, and a cooling, smoothing, and calendering station. This model, in practice for many months in Jagenberg's own paper coating plants, is of a new design giving the user simplicity in operation and maintenance.

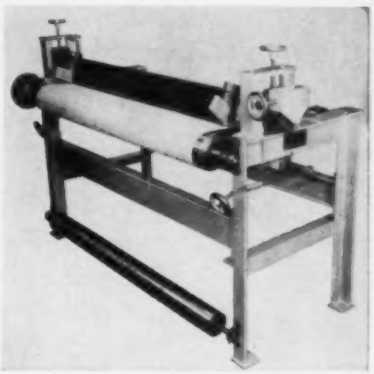
A wide range of coatings, such as plastic dispersions, clay, metal and aniline dyes, vegetable glues, etc., can be applied by a one-, two-, or three-roller coating station in connection with air-knife, smoothing rolls, a combination of both, or reverse roll coating system. Paper, board, foil, and suitable fabric can be handled. An attachment for seat-seal laminations is optional. Drying is by individually controlled infrared lamps and/or hot air and electrically operated bottom heaters with an air circulating system and vapor exhaust.

Push-button controls, scales that provide for every adjustment, and expansion shafts for rewinding and unwinding contribute to ease of operation. One side of the dryer section can be removed to thread paper. Accurate production data can be read for instruments. Web speed is adjustable steplessly from 1 to 65 fpm. The speed relation between dip and coating rolls and coating roll and web can be exactly set and varied and each roll can run in two directions. For certain requirements the length of the dryer can be extended from the standard 3 feet 3 inches to 6 feet 6 inches. Cleaning-down requires only a few minutes because the machine has been especially designed to facilitate cleaning and change quickly from one job to another.

Details are available from American Paper and Pulp Co., Inc., 300 Fourth Avenue, N. Y., or Pearce Development Co., 1606 30th Street, Cleveland 17, Ohio.

Ace Paper Moves Into New Plant

The Ace Paper Products, Inc., has just moved into new quarters in a new building at 3295 North West 65th Street, Miami, Fla. Ace Paper Products, Inc., while doing converting for the trade, also converts and distributes a line of paper products. The plant is equipped with two toilet tissue winders, one household roll towel winder, a shredder, two sheet cutters, one—60" guillotine trimmer, one Cameron rewinder and miscellaneous other printing and converting machines.



KNIFE-OVER-BLANKET COATER for use in coating of paper and fabrics has been developed by The Black-Clawson Co., Dilts Division, Fulton, N. Y. The coater offers versatility in blade adjustment and blade pressure. This additional unit rounds out the complete line of Dilts Division coating machinery for the converting industry.

Mead Acquires 3 Firms in East

Subsidiaries of the Mead Corp. have acquired the assets and business of three Massachusetts firms, D. F. Morris, Mead president, announced.

The firms include the A. and P. Corrugated Box Corp. (not related to A. and P. supermarkets) of Gardner and Lawrence, the Associated Folding Box Co. of Lawrence and the Plymold Corp. of Lawrence.

Morris Appel, Joseph D. Caimi and Carl J. Berg of A. and P., Associated and Plymold, respectively, joined Mr. Morris in the announcement. They said there will be no change in the management and personnel at any of these operations.

Financial details of the acquisitions were not disclosed.

ALBANY FELT PERSONNEL ASSEMBLED AT MAIN PLANT. PICTURED HERE IS

WHAT'S BEHIND THE ALBANY SALES ENGINEER...

Backing up the Albany Sales Engineer who regularly calls at your mill is an outstanding team — available to serve your needs at any time. Each Sales Engineer can call into action all or part of this army of highly trained specialists to help solve your felt problems, and you can be sure everyone at Albany from the top down has the papermaker's interest at heart.

You receive the benefit of your Sales Engineer's practical experience PLUS the pooled know-how of a force of over 1500 — the people who have made Albany Felt Company today's leader in the field.

As experts in their own right and as liaison between the papermaker and the world's largest felt manufacturer, Albany Sales Engineers rightfully take a prominent place in "The Big Picture" — furthering the customers' objective of producing *more saleable tons per day.*

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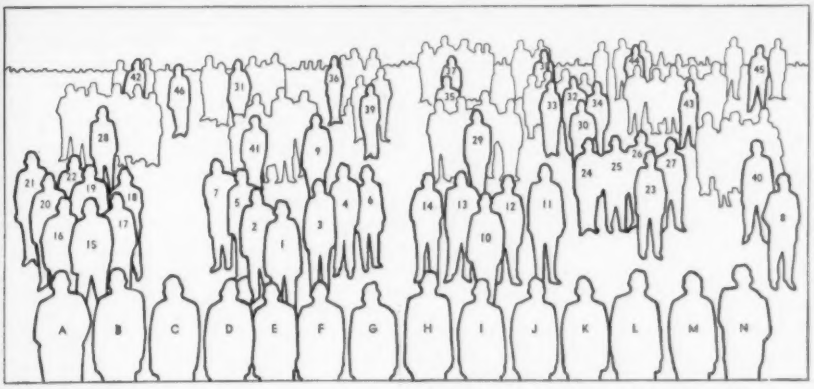

SALES ENGINEERS

A — W. D. Willetts
B — F. J. McGrath
C — R. P. Dustrude
D — B R. Owre
E — L. A. Brown
F — C. R. Spellman
G — R. T. Dando
H — L. B. Lane
I — E. C. Paca
J — C. W. Page
K — R. Gordon
L — E. L. Lyon
M — R. D. Gregory
N — J. F. Howell

MANAGEMENT

1 J. C. Standish — President
2 Z. J. Chagnon — Vice-President, Sales
3 W. G. Davis — Vice-President, Felt Sales
4 E. C. Read — Vice-President, Manufacturing
5 H. F. Hedberg — Vice-President, Research and Development
6 A. C. Cramer — Secty. and Asst. to President
7 C. H. Clifford — Treasurer
8 D. P. Bridge — Asst. Secty.
9 L. G. Briggs — Asst. Treasurer

SALES EXECUTIVES

10 J. E. Smith — Sales Mgr.
11 M. T. Reynolds — Asst. Sales Mgr.
12 C. E. Van Buren — District Sales Mgr.
13 J. E. Tanner — District Sales Mgr.
14 W. H. Schaffner — District Sales Mgr.

SERVICE ENGINEERS

15 L. M. Woodside — Chief Engineer, Tech. Field Service
16 N. J. Larson
17 W. S. Shires
18 L. H. Brown
19 G. G. Marsanskis
20 W. J. Shaughnessy
21 M. H. Rubeck
22 R. B. Wood

DESIGN

23 S. S. Engle — Chief Designer
24 W. P. Gettings
25 W. S. Wightman
26 D. F. McConaughy
27 E. D. Miller

LABORATORY

28 C. C. Gordon — Chief Chemist

RESEARCH & DEVELOPMENT

29 H. J. MacMillan — Director of Product Design

WOOL BUYING

30 G. A. Neville

MANUFACTURING

31 D. B. McLeod — Production Mgr.

CORRESPONDENTS & SECRETARIES

32 G. R. Woolfe
33 W. C. Larkin
34 J. P. Armstrong

PRODUCTION CONTROL DEPARTMENT

35 R. E. Parker — Production Planning Mgr.

BUSINESS OFFICE

36 H. J Van Buren — Order Department Supervisor
37 J. L. Lochner — Supervisor — Production Control Dept.

SHIPPING

38 J. E. Roberts — Shipping Room Foreman

PURCHASING

39 J. A. McCormack — Director of Purchases
40 R. H. Bissell — Credit Mgr.
41 H. H. Link — Chief Cost Accountant
42 G. F Baggett — Personnel Mgr.
43 W. F. Fry — Director of Industrial Relations
44 R. G. Ingraham — Chief Industrial Engineer
45 F. J. Zanetta — Quality Control Director
46 R. H. Sloan — St. Stephens Plant Mgr.

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PTJ NEW LITERATURE

L-B Belt Conveyor Idlers

Contains detailed engineering selection data on five new series and 23 types of belt conveyor idlers and illustrates their versatility for a wide range of conveyor applications. Book 2716. Link-Belt Co., Dept. PR, Prudential Plaza, Chicago 1, Ill.

1959 Reference Guide to Dow Corning Silicones

Describes what silicones best meet the needs of an unbelievable variety of problems. Contains graphic examples showing where they are currently being used and gives information on how to get specific data best suited to any application. Dow Corning Corp., Midland, Mich.

Dial Thermometers Catalog 205

Gives specifications for both direct and remote reading types of Supertherm thermometers. Also contains information on the four types of filling mediums, as well as case sizes, materials and styles. U. S. Gauge, Div. of American Machine & Metals, Inc., Sellersville, Pa.

Drip-proof Pancake Motor

Presents full engineering information on this flange type motor of conventional radial air-gap design that is intended for space-cramped applications. A cutaway drawing shows how the motor achieves its short length through formed end coils and a one-piece housing-bearing bracket. Bulletin 2150. Louis Allis Co., 427 E. Stewart St., Milwaukee 1, Wis.

Industrial Television Cameras

Gives complete specifications for Kin Tel Model 1986C and 1986 CN. The latter is specified when extreme noise levels are a hazard. Also describes Kin Tel camera accessories, such as remote-control pan-tilt and iris-focus units, an autozoom lens, and accoustical and weatherproof camera housings. Data Sheet 6-100. Kin Tel Div., Cohu Electronics, Box 623, San Diego, Calif.

Roller Gravity Conveyors

Descriptive illustrations and photos explain the application of gravity conveyors and the more common accessories. Charts and graphs are included to assist the engineer to match a conveyor to the loads. Also points out conditions to be avoided. Handbook. Lamson Corp., Syracuse 1, N. Y.

Pressure Instrument Specification Sheets

Gives construction materials, design features, performance data, operational limits, etc. on fiber glass case pressure indicator, pressure indicating controller, pressure indicating pneumatic transmitter, pressure indicating electrical (DC) transmitter and pressure indicating electrical (AC) transmitter. Nos. 11-1451P-1 to 5 inclusive. Fischer & Porter Co., 843 Jacksonville Rd., Hatboro, Pa.

Taylor Sensaire Temperature Transmitter

Converts temperature, measured by a filled thermal system, into a proportional 3-15 p.s.i. air output pressure. The non-indicating instrument then transmits this pressure to a receiving recorder or indicator, and/or controller. Also includes specifications and engineering drawings showing ease of installation. Taylor Instrument Companies, 95 Ames St., Rochester 1, N. Y.

Peerless Type A Pumps

Provides cutaway sectional views and cross-section drawings that describe the pumps in detail. Also includes complete dimensional and performance data and a thoroughly detailed page of sample specifications. Peerless Pump Div., Food Machinery & Chemical Corp., 301 West Ave., 26, Los Angeles 31, Calif.

Airfloat Tables

Describes this modern conveyor system for paper mills, paper handling plants, printing houses, etc. Enables packages to be handled easily and stacks of paper to be pushed along even by inexeprienced personnel without danger of slippage or disarrangement of vertical alignment. 4p Color Folder. Lamb-Grays Harbor Co., Inc., Hoquiam, Wash.

Ideas in Action

Explains how Halifax Paper Co. assures damage free shipment of rolls of kraft paper by using heavy-duty steel strapping which virtually eliminates oscillation of rolls during transit. The report includes a loading diagram and step by step description of loading and bracing. Report Ul-13. Acme Steel Co., 135th St. and Perry Ave., Chicago 27, Ill.

Portable Pneumatic Conveyor

Includes a close-up photograph of the completed unit and an engineering drawing giving dimensions and major design details. Said to have unlimited possibilities for in-plant handling of granular free-flowing materials. Advance Specifications Sheet 205. Sprout, Waldron & Co., Inc., 130 Logan St., Muncy, Pa.

Liquid Level Control System

Tells how sliding gate and plate regulators give tight shut off and accurate control from 1 to 2300 gallons per minute capacity and may be used wherever critical liquid level control is needed. Also illustrates and describes the installation and operation. Bulletin J-170. OPW-Jordan 6013 Wiehe Rd., Cincinnati 13, Ohio.

Perkin-Elmer Spectrophotometer

Describes Model 4000-A spectrophotometer, a laboratory analytical instrument covering the ultraviolet, visible and near infrared wave length regions. Also includes operating features, specifications and applications, as well as illustrations of typical spectra obtained. Brochure. Perkin-Elmer Corp., Norwalk, Conn.

Proportioneers Adjust-O-Feeder

Contains photographs of the simplex and duplex models, a capacity table listing capacity in g.p.h. maximum discharge pressure in p.s.i.g., type, plunger diameter in inches, stroke length in inches and strokes per minute. Also provides dimensional line drawings and descriptive information on the Model 1106 proportioning pump. Bulletin 1106.20A-1, B-I-F Industries, Inc., Providence 1, R. I.

Kaiser Aluminum Foil

Discusses aluminum foil converting processes in detail, and reviews many end uses. 244p technical book. Available without cost if requested on company letterhead, otherwise price is $12.50. Kaiser Aluminum & Chemical Sales, Inc., 919 N. Michigan Ave., Chicago 11, Ill.

Bendtsen Hardboard Tester

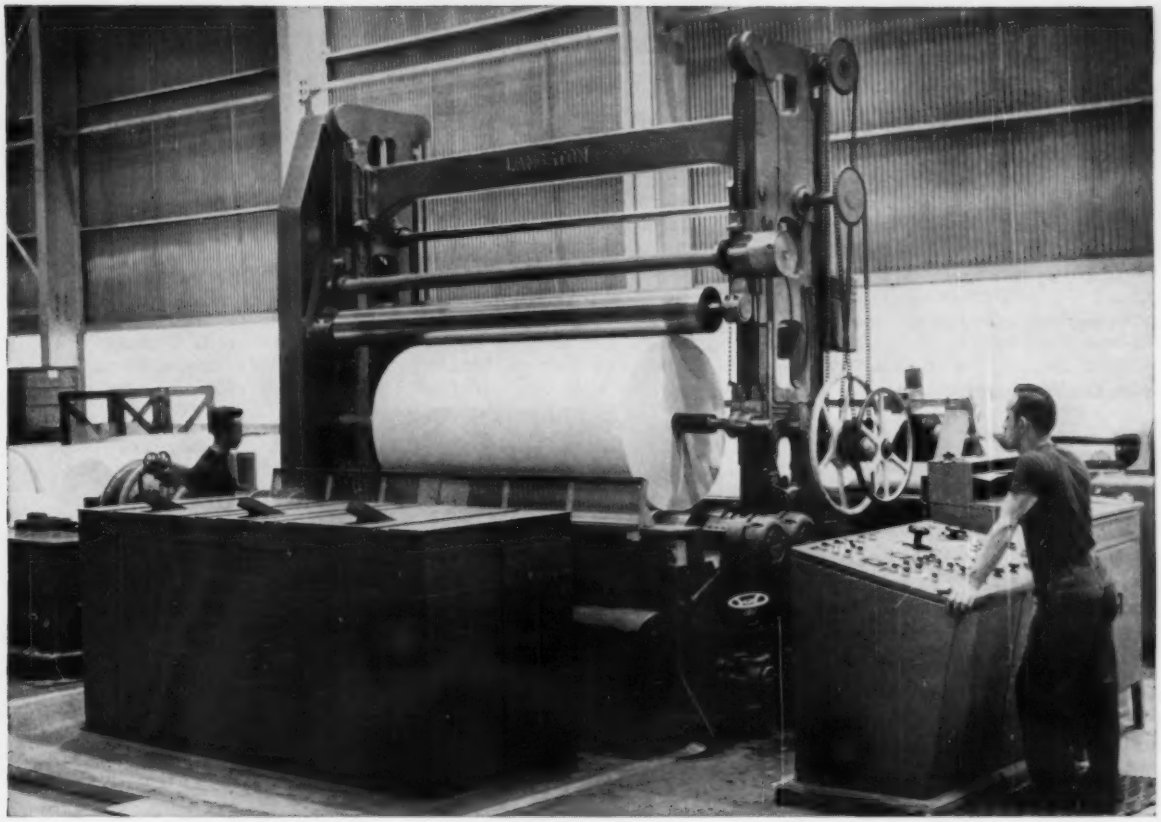
Tells how measurement is based on the principle of a weak air-flow passing between the surface of hardboard to be tested and a special gauge. This tester also measures surface stability. Catalog. Robins Instrument Co., Inc., 110 West 30th St., New York 1, N. Y.

Vertical Conveying Systems

Describes the combing vertical conveyor which is a flexible, compact method of tying together horizontal floor conveyors in a multi-floor building into an integrated system. Bulletin 205. Lamson Corp., Syracuse 1, N. Y.

Syl-Off Silicone Coatings

Contains illustrated sales copy and list the broad advantages offered by Syl-Off coatings. Brochure. Dow Corning Corp., Midland, Mich.



One of the two 104-in. Langston Slitters and Winders in the Glatfelter mill completing rewind. Roll drop table in foreground is up, ready to receive roll when ejected by the winder, and chocks are in raised position to stop the roll. Note console incorporating all major indicators and controls.

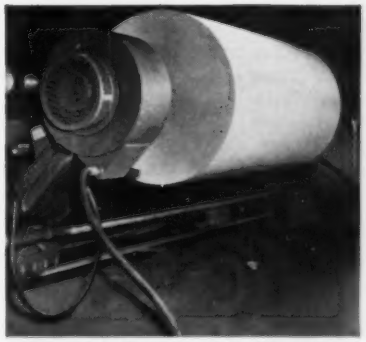
Langston Slitters and Winders turn out tight, even rolls at Glatfelter Mill

Two 104-in. Langston Slitters and Winders have been working in the new mill of P. H. Glatfelter Co., Spring Grove, Pa., for more than a year. They have proved themselves in round the clock production on grades from fine papers to book.

One of the most important features, according to the company, is the constant tension unwind control on the Langston Shaftless Roll Stand, which keeps the tension constant throughout the winding operation. Perfect rolls can be turned out from 9 to 100-lb. stock in roll widths from 7½ to 104 in.

The equipment can be quickly loaded and lined up on the back stand and is designed for easy threadup and gang slitter setting. Hydraulic roll ejectors move the finished rolls quickly from the winding position to the roll drop. Other features include shearcut slitters to eliminate dust; many interlocked controls for extra safety; automatic edge guide control to allow precision trim rewinding of narrow and salvage rolls.

Find out how Langston Slitters and Rewinders can benefit you. Write SAMUEL M. LANGSTON Co., 6th & Jefferson Sts., Camden 4, N.J.



Langston Shaftless Unwind Stand eliminates back-breaking, time-consuming task of hoisting heavy shafts into place. Hydraulically operated arms reach out, pick up the roll, and raise it into running position—a 1-man, pushbutton operation.

LANGSTON Leadership...by design

Paper Industry Leads Way Out of Recession

Reviewing what happened to and in our industry last year and a forecast of the outcome in the current year.

John C. W. Evans
Editor

Last year in the midst of a recession our industry confounded its critics. Paper and board production equalled or slightly surpassed that of 1957. We have been unable to learn of any other major industry which did as well. Our rebound began in July, ahead of most business indicators. As is well known to most of our readers, that accomplishment was achieved in the face of an extremely poor first half of the year.

Total basic production (paper and board plus pulp produced but not used in their manufacture i.e. dissolving and exported pulps) totalled close to 31.9 million tons, off less than half of one per cent from the previous year. Paper and board production at 30.7 tons was extremely close to the 1957 figure. There were very few segments or areas in our industry which did not set new six month production records with their output in the last half of the year. Paperboard, hardest hit in the first six months, made the biggest comeback. Paper less hard hit in the first place, failed to react as strongly to the business up-turn. Over-all pulp production was off only about one per cent for the year, but market pulp production was off 10 per cent during a period when considerable new capacity came in.

Paper and board last year, while it equalled 1957 production, was about two per cent below the boom year of 1956. Output in 1959 is forecast at eight per cent above the last two years and 6 per cent above the record 1956. Outlook for different grades of pulp, paper and board will be discussed later.

Waste paper purchases and prices reacted strongly to the big upswing in board production. Waste paper, which in recent years has constituted one third of our mills fiber furnish, will be in very active demand if our forecasted paper and board production is correct.

During the year a number of important expansion projects were completed as follows: Five new market pulp mills; six new board mills; two new tissue mills; two new building board mills, and four new newsprint machines.

A number of major new projects, or postponed older ones will be completed in 1959 or early next year. These include two new market pulp mills, two new kraft pulp and board mills, one new waste paper board mill and one new printing paper mill.

The projects completed in 1958 and those for 1959 are both tabulated in this article.

Beyond 1959

Last year Paper Trade Journal published (April 28, 1958) an article "How Much Will Our Industry Grow by 1970" by A. K. Beggs, author of the well-known Weyerhaeuser report "America's Demand for Wood, 1929-1975". Mr. Beggs predicts that paper and board consumption will increase by 14 million tons in 1965 (an increase of 45 per cent over 1958) and by 23 million tons in 1970 (a 75 per cent increase over 1958). The bulk of this increase will come from U. S. production but it will also mean rising imports of pulp, paper and board in order to supply the demand.

Woodpulp

Total woodpulp production was off about one per cent compared with 1957. Eighty-five per cent of this was by companies for their own use, and balance of 15 per cent was market pulp. Production of market pulp (both paper and dissolving) was off ten per cent from the previous year. This represented the sharpest decline shown for any product of our industry. Domestic shipments of pulp were off nine per cent and export 14 per cent. Three new market pulp mills started-up in 1958 and two more plan to come into operation this year.

Imports of market pulp from Canada were at about the same level as in the previous year while imports from Europe were off five per cent. While exports of pulp to Europe were off four per cent, they still stood 15 per cent higher than the corresponding imports.

Production of dissolving pulps was off ten per cent, and while there should be considerable improvement in the market for these grades in 1959, there is more than ample capacity available to take care of any surge in demand for the next few years.

Greatest decline in production was seen for unbleached sulphite; the total was off ten per cent and market pulp off 20 per cent. Total bleached sulphite production down 5 per cent and market pulp down about 17 per cent.

With a number of new mills starting up, total bleached kraft pulp production was up six per cent, but market pulp shipments were down nearly ten per cent. Semibleached kraft, percentagewise a fast growing grade, showed an increase of over five per cent in production and about 13 per cent in shipments. Unbleached kraft pulp production was down around one per cent, almost 90 per cent of this is produced at the point of consumption. Unbleached kraft market pulp, not a big item, was off about three per cent. Semi-chemical pulp production, which has only became an important item since the last war, was down about two per cent. Market shipments of this grade,

for technological reasons, still remains small.

Soda pulp output over-all was very close to the previous year while shipments were down about five per cent.

Groundwood pulp production, a large proportion of which is used in newsprint manufacture was off about three per cent. Market shipments of groundwood, next to semi-chemical pulp the least important grade shipped, was off 50 per cent.

Outlook for pulp production is closely tied to the paper and board picture which is discussed in detail later. Exports should show a modest improvement in 1959. Market pulp mill operations will be hampered by over-capacity for the next year or two.

Paper and Board

Paperboard (excluding building board) production in 1958 was close to 14.3 million tons or nearly one per cent higher than in 1957. Summing up the 1959 outlook by grades it looks as if paperboard production will be six per cent to eight per cent ahead of 1958.

Total paper production was 14.8 million tons or slightly better (depending on final adjustment of the figures). This is about one half of one per cent below the 1957 figure. Indications based on the present pattern trend of the economy are that paper output in 1959 will be six to eight per cent above the 1958 figure. Only grade of paper to show a real falling off (four per cent) in production or consumption was newsprint, due entirely to the decline in newspaper advertising. Newspaper advertising failed to react as fast as most parts of the economy to the business upswing. Positive forward motion was made by the ubiquitous sanitary tissues (five per cent), construction papers (four per cent).

Graphic data on following pages.

New Mills and Paper Machines Started-up in 1958

Notation P.T.J. and date following an item indicates the issue of Paper Trade Journal which carried a detailed description of the project.

ABITIBI CORP., Alpena, Mich.—New $16 million hardboard and insulating board plant.—**P.T.J. May 26, '58.**

AMERICAN BOX BOARD CO., Filer City, Mich.—$17.5 million expansion program including bleached kraft pulp mill and bleached board fourdrinier to make 150 tons/day.—**P.T.J. May 19, '58.**

BOWATERS SOUTHERN CORP., Calhoun, Tenn.—$21 million expansion program completed in December with start-up of fourth newsprint machine.

CHILLICOTHE PAPER CO., Chillicothe, Ohio—New 188-inch fourdrinier to make offset and papeterie grades.—**P.T.J. July 28, '58.**

CONTAINER CORP., Brewton, Ala.—New $30 million 300 ton bleached kraft pulp and board mill.—**P.T.J. Jan. 27, '58.**

CONTINENTAL CAN CO., Hodge, La.—New 246-inch fourdrinier to make 800 tons per day of liner board.

COOSA RIVER NEWSPRINT CO., Coosa Pines, Ala.—$35 million expansion completed with start-up of third newsprint machine to make 400 tons per day.—**P.T.J. Aug. 11, '58.**

CROWN ZELLERBACH CORP., Antioch, Calif.—Two "Little" tissue machines.—**P.T.J. July 28, '58.**

DIAMOND GARDNER CORP., Red Bluff, Calif.—New mechanical pulp mill and molded pulp products plant.—**P.T.J. Jan. 5, '59.**

EASTERN CORP. (Div. of Standard Packaging), Lincoln, Maine.—New 175 ton bleached kraft pulp mill.—**P.T.J. July 14, '58.**

GEORGIA-PACIFIC PAPER CO., Toledo, Ore.—New $22 million 250 ton unbleached kraft pulp and containerboard mill.—**P.T.J. May 5, '58.**

GULF STATES PAPER CO., Demopolis, Ala.—New 300 ton per day bleached kraft market pulp mill.—**P.T.J. Mar. 17, '58.**

HAMILTON PAPER CO., Miquon, Pa.—New fine paper machine completed $4.5 million expansion.—**P.T.J. Dec. 22, '58.**

HURLBUT PAPER CO., Lee, Mass.—New one machine specialty paper mill started up.—**P.T.J. Dec. 10, '58.**

INTERNATIONAL PAPER CO., Corinth, N. Y.—New 200 ton per day fourdrinier to produce machine coated papers.—**P.T.J. Oct. 13, '58.**

INTERNATIONAL PAPER CO., Pine Bluff, Ark.—New groundwood, kraft pulp, newsprint (375 T/D) and bleached board (450 T/D) mills costing $60 million.—**P.T.J. Dec. 15, '58.**

KIMBERLY-CLARK CORP., New Milford, Conn.—New 150 ton per day, two machine sanitary tissue mill.—**P.T.J. Jan. 26, '59.**

MARATHON SOUTHERN CORP. (Div. of American Can), Naheola, Ala.—New bleached kraft market pulp, tissue and specialty paper mill.—**P.T.J. Jan. 5, '59.**

OLIN MATHIESON CHEMICAL CORP. (Ecusta Div.), Pisgah Forest, N. C.—New paper machine to make light weight paper.

POTLATCH FORESTS, INC., Pomona, Calif.—New 160-inch trim paper machine to make writing grades.—**P.T.J. Nov. 17, '58.**

RIEGEL PAPER CORP., Acme, N. C.—$15 million program including bleached kraft pulp expansion and new 250 ton per day white paper and board mill.—**P.T.J. June 16, '58.**

RUBEROID CO., Gloucester City, N. J.—New roofing felt machine, capacity 65 tons per day.—**P.T.J. Mar. 24, '58.**

SONOCO PRODUCTS CO., Hartsville, S. C.—New semi-chemical pulp mill and fourdrinier to make corrugating medium (175 tons per day) completed at cost of $10 million.—**P.T.J. June 30, '58.**

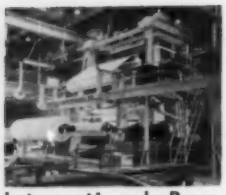
SOUTHERN PINE LUMBER CO., Diboll, Tex.—New insulation board plant complete with mechanical pulping facilities.—**P.T.J. Aug. 25, '58.**

SOUTHLAND PAPER MILLS, Lufkin, Tex.—Fourth newsprint machine, 270 inch width, started up.

UNION BAG-CAMP PAPER CORP., Franklin, Va.—Pulp mill expansion and new machine to produce 200 tons per day of white papers.

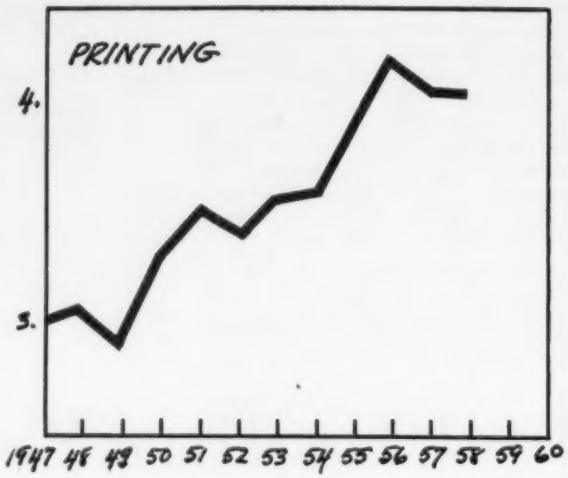
WALDORF PAPER PRODUCTS CO., Missoula, Mont.—New 250 ton per day unbleached kraft pulp mill.

Chillicothe Paper Co., Chillicothe, Ohio.



International Paper Co., Corinth, N. Y.

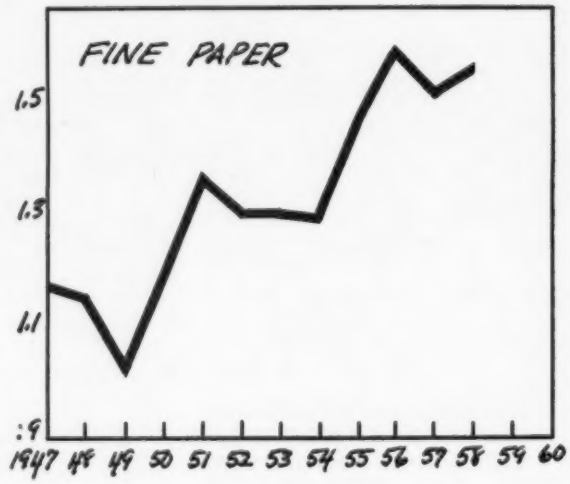
FIGURES AT LEFT OF GRAPHS INDICATE MILLIONS OF TONS



Printing papers, largest single classification in the paper group, held their own last year. Production was very close to the previous year. A six per cent to eight per cent increase in production is predicted this year. Three new large machines will start-up on this grade.

Potlatch Forests, Inc., Pomona, Calif.

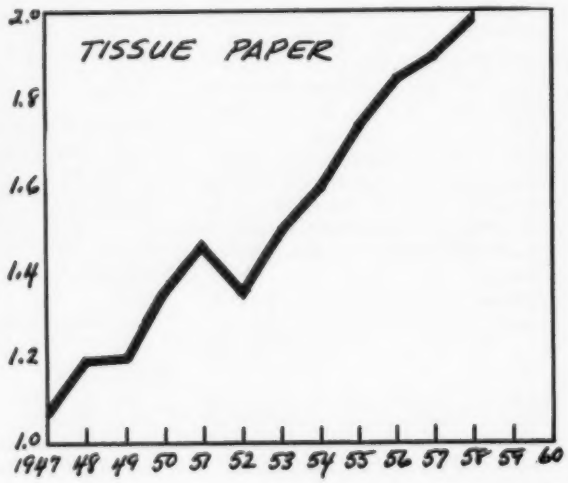
Hamilton Paper Co., Miquon, Pa.



Fine papers, never spectacular in their growth, did progress ahead last year with a two per cent to three per cent gain over 1957, which rate is typical of their expansion during the past ten years. A similar or slightly larger increase is forecast for 1959. Several new machines will come into production.

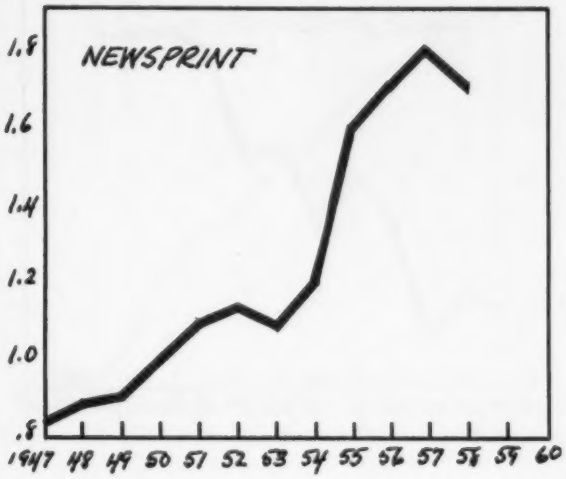
Kimberly-Clark Corp., New Milford, Conn.

Crown Zellerbach Corp., Antioch, Calif.



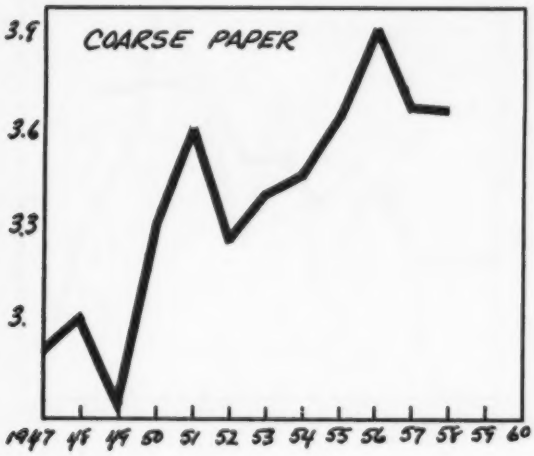
Tissue papers, particularly sanitary grades, continued their strong growth in the face of the recession. Production was up about five per cent. Percentage increase for 1959 may be as much as double that figure. Three new machines are slated for start-up.

FIGURES AT LEFT OF GRAPHS INDICATE MILLIONS OF TONS



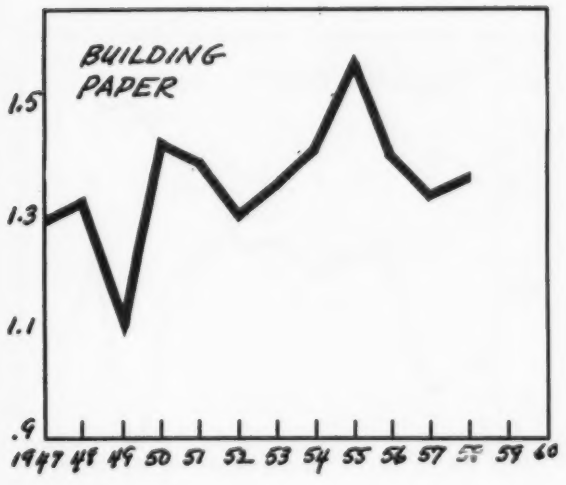
Coosa River Newsprint Co., Coosa Pines, Ala.

Newsprint production was off nearly four per cent. Output in 1959 will depend on the rise in newspaper advertising lineage. With a moderate increase, newsprint output will be up five per cent to seven per cent. Behavior of consumer advertisers is unpredictable (they have so far failed to show a strong reaction to the upswing in consumer spending) and a big increase in lineage could shove newsprint demand beyond our forecast. No new newsprint machines will start-up in 1959. This part of the industry is faced with considerable excess capacity.



Georgia Pacific Paper Co., Toledo, Ore.

Coarse papers (principal items in this group are wrapping, bag and multiwall sack) about matched the 1957 output last year. Demand for these grades in 1959 should result in about a five per cent increase in production. One or two new machines to make these grades will come into operation this year. Of interest is the growing number of licenses to manufacture stretchable paper, "Clupak".



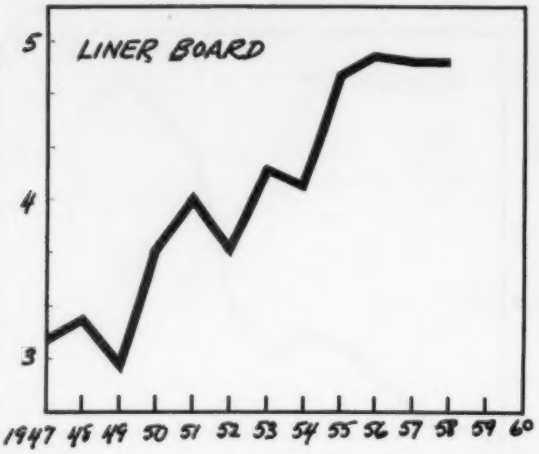
Ruberoid Co., Gloucester City, N. J.

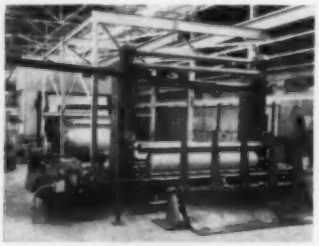
Construction paper or building paper reacted to the growth in construction in 1958 with a four per cent increase in output. Construction activity forecast for 1959 indicates a demand increase of as much as ten per cent over last year for building papers. We know of no new mills or machines planned for this year.

Dierks Paper Co., Pine Bluff, Ark.

Liner board, which together with corrugating medium constitutes the components of corrugating shipping containers, due to high inventories, had an extremely poor first half, but starting in July demand grew so that production for the whole year was slightly ahead of 1957. Corrugated box production was up one per cent for the year. Liner, corrugating and chip and filler boards are customarily classed together as containerboard. These latter grades which represent a small total of the class were off almost twelve per cent for the year.

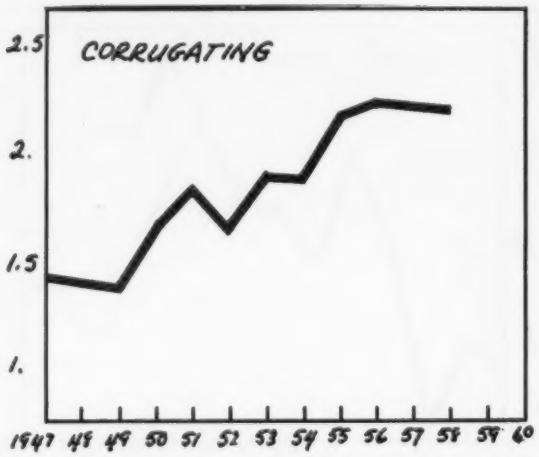
FIGURES AT LEFT OF GRAPHS INDICATE MILLIONS OF TONS

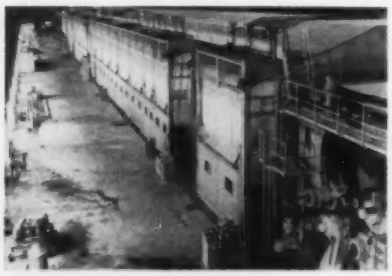




Sonoco Products Co., Hartsville, S. C.

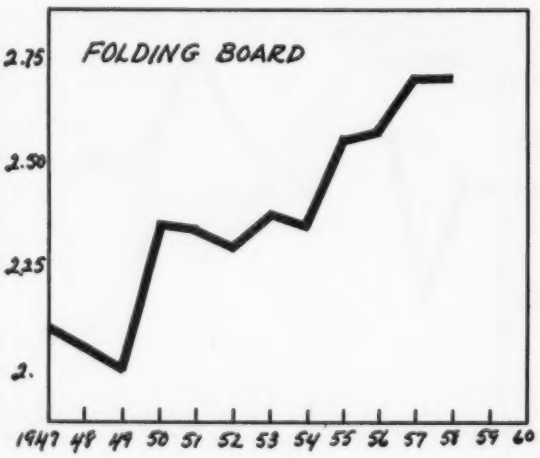
Corrugating medium, like liner, suffered from high inventories and although there was a strong upsurge in demand, it was not quite sufficient to carry the total for the year up to the level of 1957. Almost all consumer products are transported, in corrugated shipping containers. Therefore containerboard demand is particularly sensitive to general business conditions and consumer buying. We therefore predict a seven per cent to ten per cent rise in containerboard production in 1959. Increases in capacity will be very moderate.





Riegel Paper Corp., Acme, N. C.

Folding boxboard production ran one per cent ahead of 1957. Growth of folding boxboard in recent years has been chiefly at integrated bleached kraft pulp mills rather than from waste paper or market pulp. An important area of growth for this board has been for multi-pack cartons for cans and bottles. Folding box outlook in 1959 is for continued growth with demand for board for this grade up six per cent to eight per cent. Only a very small capacity increase is indicated for this year.



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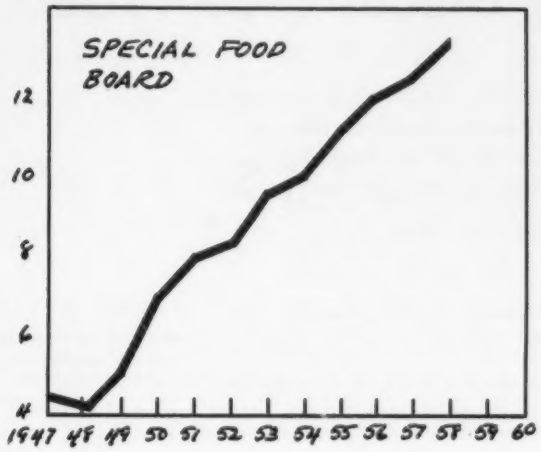
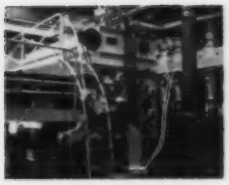
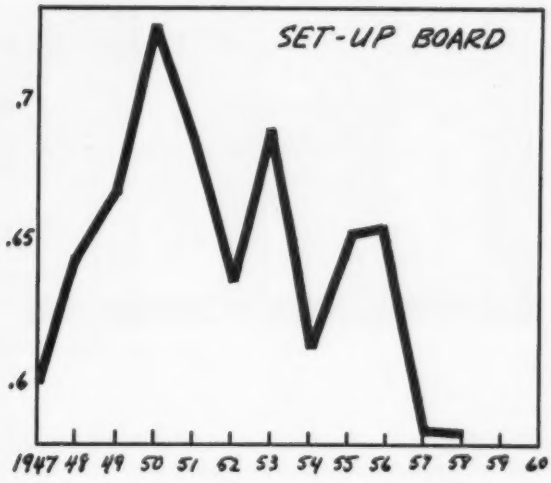


International Paper Co., Pine Bluff, Ark.

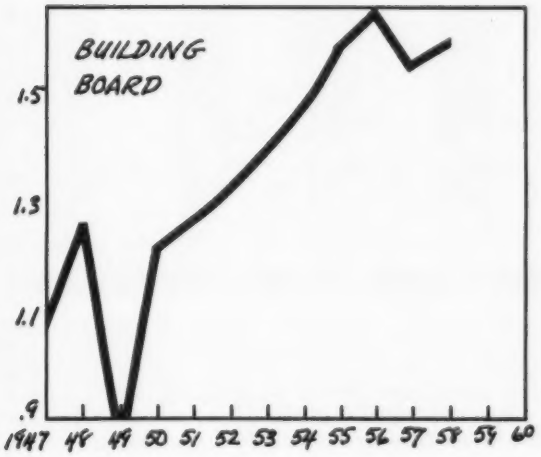


American Box Board Co., Filer City, Mich.

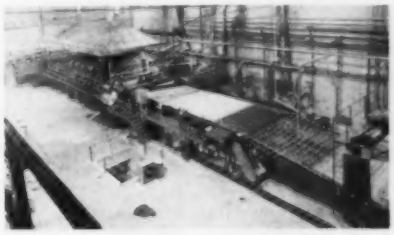
Special food board has for a number of years been the fastest growing segment of paperboard manufacture. In 1958 it was the only grade to show a substantial production increase, about seven per cent. Growth in the use of paper milk containers has been primarily responsible for this rise. Future growth will probably be slower. Production in 1959 may be up three to five per cent. Increases in productive capacity this year will be in the order of four per cent.



Set-up boards continued to lag as they have in recent years as consumption of set-up boxes has failed to keep pace with growth of the economy. Production in 1958 was off about one per cent. A similar further decline is anticipated this year. No capacity increases are indicated.



Abitibi Corp., Alpena, Mich.

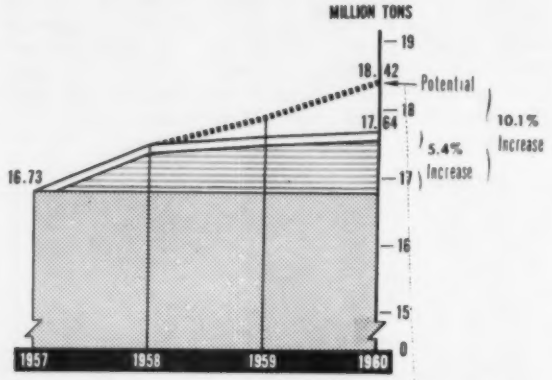


Building board, we consider as separate from paperboard because of the nature of the manufacturing processes used rather than end use. These grades were up about four per cent last year due to increased construction activity. On the basis of forecasts of construction in 1959, a rise in building board production of ten per cent is indicated. Two new plants producing these are planned for start-up this year.

Paperboard Capacity By Grades 1957-1960

The National Paperboard Ass'n. recently completed a capacity survey the results of which are shown in the graphs on this page. These graphs are made up on a basis of 313 working days per year. Capacities shown are for the end of the year, not on an average for the year.

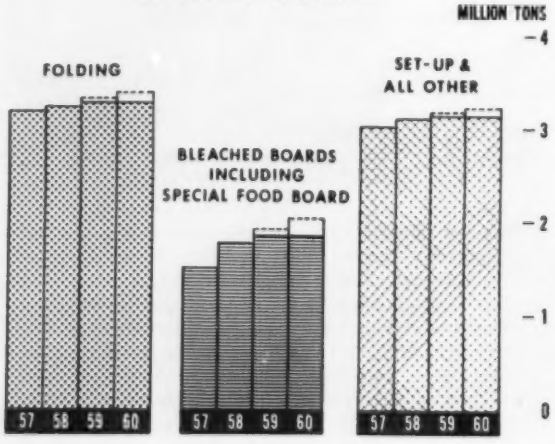
TOTAL PAPERBOARD CAPACITY



Paperboard capacity increases are for two bases, one those actually planned, and two those under consideration but not definitely committed to. The latter are called "Potential Increases." For 1959 "actual" increases is only one percent over 1958 and for 1960 much less. But total possible increases (actual plus potential) amount to two and one-half and five percent respectively for 1959 and 1960, over the year end 1958 figure.

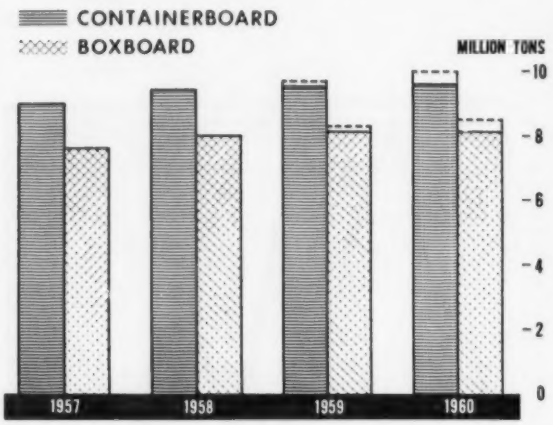
Boxboard capacity increases are chiefly in bleached boards of which special food board is the largest item. In fact increases for bleached boards is greater than for any other board grade with kraft liner second. Indications are for an eight precent increase in bleached board capacity this year and about the same amount in 1960.

BOXBOARD CAPACITY

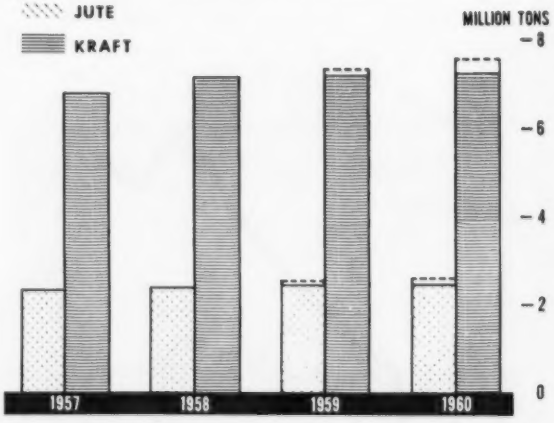


Boxboard capacity increases projected for the next two years will be slightly larger than for containerboard, with special food board and kraft liner being chiefly responsible for the bulk of the use in its group.

CONTAINERBOARD & BOXBOARD CAPACITY



CONTAINERBOARD CAPACITY



Containerboard capacity ("actual plus potential") for 1959 and 1960 stand two percent and four and one-half percent respectively above 1958. The bulk of the increase is for fourdrinier kraft liner and semi-chemical corrugating medium, the balance of the grades in this group show little or no increase, even declines in a number of cases.

Major Projects for Completion in 1959 or Later

Alaska Lumber & Pulp Co., Sitka, Alaska	New 350 ton dissolving pulp mill costing $55 million to start up late 1959.
Buckeye Cellulose Corp., Foley, Fla.	Pulp mill capacity doubled to 720 tons per day. Bleached kraft and dissolving pulps. January 1959. Cost $20 million.
Bowaters Board Co., Catawba, S. C.	New 500,000 sq. ft. per day hardboard mill. To start up late in 1959.
Bowaters Carolina Corp., Catawba, S. C.	New 400 ton bleached kraft market pulp mill at a cost of about $38 million. To begin operation late in 1959.
Cascade Kraft Corp., Wallula, Wash.	New unbleached kraft pulp and container-board mill, 150 tons per day. Early 1959.
Celotex Corp., L'Anse, Mich.	New building board mill. 500,000 sq. ft. per day. Cost $6 million. Start up spring 1959.
Champion Paper & Fibre Co., Canton, N. C.	New 300 ton per day paper machine to make uncoated book papers. Start up spring of 1959.
Continental Can Co., Augusta, Ga.	New 350 ton per day bleached kraft pulp and board mill to be completed early 1961.
Continental Coatings Corp., Sayreville, N. J.	New insulating board plant using waste papers as furnish. To start up spring 1959.
Crossett Paper Mills, Crossett, Ark.	Improvement program to increase bleached board output by 50 tons per day. completion early 1960.
East Texas Pulp & Paper Co., Evadale, Tex.	Installing rebuilt cylinder board machine moved from Southland Paper Mills. 80 tons per day bleached board. Start-up mid 1959.
Fox Paper Co., Lockland, Ohio	$7 million five year expansion program to increase production 75 tons per day.
Gilbert Paper Co., Menasha, Wis.	New fine paper machine. To start-up spring of 1959.
Gulf States Paper Co., Tuscaloosa and Demopolis, Ala.	Three year $20 million program to include paper making facilities and pulp expansion at Demopolis.
Halifax Paper Co., Roanoke Rapids, N. C.	New large paper machine to make heavy weight unbleached kraft papers. $6.5 million project to be completed early summer 1959.
Hammermill Paper Co., Erie, Pa.	Major expansion of semi-chemical and sulphite pulp mills and finishing room for completion 1959.
Johns-Manville Corp., Klamath Falls, Ore.	New building board plant costing $12 million to start up early 1959.
Minnesota & Ontario Paper Co., International Falls, Minn.	New 158-inch paper machine to make groundwood specialties. Start-up spring 1959.
Nekoosa Edwards Paper Co., Potsdam, N. Y.	Rebuilt paper machine transferred from Nekoosa. 1959.
Nekoosa Edwards Paper Co., Nekoosa, Wis.	$15 million expansion program includes new fine paper machine to start-up mid 1959.
Nicolet Paper Corp., West De Pere, Wis.	New 160-inch paper machine to make glassine. Completion late 1959.
Noralyn Paper Mills, Inc., Donaldsonville, La.	Proposed semi-chemical pulp and newsprint mill. 150-250 ton per day capacity.
Northwest Paper Co., Brainerd, Minn.	$5 million expansion program includes new large fine paper machine for completion in 1959.
Owens-Illinois (National Container), Big Island, Va.	New large fourdrinier to make 265 tons per day of containerboard. Slated for start-up in September 1959.
Oxford Paper Co., Rumford, Maine	$15 million improvement program includes new 175 ton per day bleached softwood kraft pulp mill and hardwood kraft pulp mill expansion by 100 tons per day. Completion in 1961.
Sayreville Paper Board Co., Sayreville, N. J.	New paper board mill to make patent coated and folding grades. To start-up February 1959.
St. Francisville Paper Co., St. Francisville, La.	New machine coated printing paper mill. To start up spring of 1959.
Tennessee River Pulp & Paper Co., Counce, Tenn.	New kraft pulp and containerboard mill of 500 tons per day capacity to start up early in 1951.
Union Bag-Camp Corp., Savannah, Ga.	New unbleached kraft paper machine 400 tons per day capacity. To start up January 1960.
West Virginia Pulp & Paper Co., Luke, Md.	$50 million expansion program includes two large printing paper machines, one to produce machine coated papers. Mid 1960's.

Size Presses and Calender Box Treatments Highlighted . . .

. . . at Western Michigan's third annual Pulp and Paper Conference which also featured the dedication of the school's new experimental paper machine.

Ernest F. Barker
Special Reporter
Paper Trade Journal

Size presses, size press design and many varied methods of treating paper and board with calender boxes were the subjects of discussion at a record turnout meeting held January 14 and 15 in the new building of the Department of Paper Technology, Western Michigan University, Kalamazoo, Mich. This was the third annual Pulp & Paper Conference, sponsored by the University.

A record total of about 230 pulp and paper men attended to hear the day and a half long sessions and discussions. There were two meeting highlights, as had been expected: (1) The dedication of the school's new experimental paper machine and (2) considerable interest centered around horizontal size presses. The latter subject covered in detail in Paper Trade *JOURNAL* of July 28, 1958, was by far the greatest subject of interest the mill men had come to hear more about and discuss among themselves.

After a welcome by Dr. Paul B. Sangren, president of Western Michigan University, the Conference attended the first session on Wednesday afternoon, on Size Presses, moderated by Morris W. Kane, technical director of the K.V.P. Co. This session, introduced by Dr. R. A. Diehm, of Western Michigan University's paper school staff and general chairman of the conference, featured the following speakers and papers: "An Engineer's View of Size Press Design," by Otis Whitwork, Black-Clawson Co.; "Size Press Potentialities," by Dr. P. H. Dixson, Fox River Paper Corp.; "Size Press Coating," by Harley Nelson, Allied Paper Corp.; "Experiences With The Horizontal Size Press," J. D. Lean, Rex Paper Co. and "Size Press Rolls," by John P. Dickson, Jr., Stowe-Woodard, Inc.

F. E. Bahrenburg
vice president, Watervliet Paper Co., banquet speaker.

Dinner that evening at the student university center featured F. E. Bahrenburg vice-president of Watervliet Paper Co. whose paper, "Two Challenges" was widely acclaimed as a message of unusual impact. Mr. Bahrenburg was introduced by Bertgis H. Cooper, vice-president of Kalamazoo Paper Co., who was toastmaster. After dinner Mr. Cooper presided over the dedication ceremonies of Western Michigan's new experimental paper machine. Dr. John R. Fanselow, associate professor, the man who has been given credit by many as having contributed much to the experimental paper machine, made the presentation speech. Dr. Paul B. Sangren, president of the University, replied in acceptance.

The Thursday morning session featured "Calender Treatments." Joseph Cutrow, chief engineer, Otsego Falls Paper Co. was moderator. This session featured the following papers: "Design of Calender Boxes," by Paul Pringle, Beloit Iron Works; "Potentialities of Calender Box Treatments," by Dr. R. A. Diehm, Western Michigan Paper School and "Calender Box Treatments From The Converter's Viewpoint," by Edward Stephenson, Sutherland Paper Co.

The Thursday luncheon featured Harry Weston, executive secretary, Supts. Assn., who spoke on "Refresher Courses In Pulp and Paper." Dwight D. Stocker, president of the K.V.P. Co. was toastmaster. The Thursday afternoon session consisted of an informal panel discussion with audience perticipation. Session theme was: "Practical Calender Box Treatment." A. T. Luey, executive secretary of the Box Board Research and Development Ass'n. was moderator. Panel members were: Joseph L. Waber, National Gypsum Co.; Charles Jakeway, American Box Board Co.; William Kroeschell, Michigan Carton Co.; Russell Lewis, Ohio Box Board Co.; Leslie Peck, Mac Sim Bar Paper Co. and William Manor, Consolidated Paper Co.

Size Press Design and Operation

Otis R. Whitworth, staff engineer, The Black-Clawson Co., presented a paper entitled: "An Engineer's View of Size Press Design." Here are highlights from this address: Pick-up of size materials depends on variables, some of which are inter-related and which must be closely controlled. Sheet density reduces the ability of the sheet to absorb as the density increases. As density increases, adjustments in the operation of the size press must be made, such as the sheet's time of exposure to the size or the ability of the size to penetrate. Sheet smoothness is somewhat related to density. An attempt to improve surface smoothness usually results in appreciable reduction of caliper and an increase in density. The amount of internal sizing and the way in which the sheet is handled are also important factors. The more internal sizing in the sheet, the less will be picked up at the size press. The amount of moisture in the sheet at the size press must be controlled closely. The sheet will not absorb the size properly if the sheet is too dry or too wet. Between five and twelve per cent moisture is generally considered optimum range for best sizing. An increase in solids content of the sizing material will increase the amount of pick-up. The range of solids can be from very low percentages up to around 20 to 25 per cent. Concentrations approaching 50 per cent solids have been tried. The usable percentage of solids is largely controlled by the viscosity of the size suspension.

Roll Loading

One of the major variables of the size press itself is roll loading. With other factors constant, the higher the nip pressure, the less the amount of size pick-up as the size is more effectively squeezed out. The diameter of the rolls has a great effect on the amount of pick-up. The larger the roll, the more nip pressure must be applied in order to squeeze out the same amount of size. The diameter also affects the amount of crown which must be used. Usually a large diameter, as compared to the nip pressure and roll face, is used so that crowns can be kept to a minimum. Minimum crowns have several advantages. They enable the operator to use a wider range of nip pressure for a given change of deflection and small crowns can be placed all on one roll with a minimum of scouring action to wear the crown.

Once the stiffness or size of the roll is set for a pair of identical rolls the crown necessary for a given nip pressure is identical, regardless of the position in which the rolls are placed. The rolls can be placed vertically or horizontally with respect to each other, but this does not affect crown. Some mills use two rubber covered rolls instead of one roll of metal or other hard material. Some claim that better results have been obtained with this combination, but this has only been reported in a few isolated cases.

Vertical vs. Horizontal Size Press

Frequently, both size press rolls are driven. On horizontal presses this is always done. Vertical presses are made both ways. This drive may take many different forms, but it is always necessary to have some variable speed device in order to at least compensate for roll grinding. Vertical and horizontal size presses operate in the same basic manner, but there are significant differences in the results which can be obtained. The vertical size press has been used almost exclusively for a number of years. Recently, however, considerable attention has been focused on the horizontal press. In the vertical press the rolls are arranged on a vertical centerline with the movable roll arm connected to a lifting-loading device. A save-all pan under the bottom roll extends slightly above the horizontal center-line. The size outlet from the save-all can be varied in height to control the depth of the size pond. A shower pipe extending across the sheet is used to apply the size to the top of the sheet. The holes in the pipe are usually spaced about six inches apart. To hold the size at the nip, the sheet is led into the press at a slight downward angle. This forms a pond, the weight of which must be supported by the sheet. Because of this weight, there is a very great tendency to bag the sheet in the vertical size press. To overcome this bagging, it is necessary to hold tight draws into the vertical press. Since the amount of moisture in the sheet affects the shrinkage of the sheet, and therefore the draw, it is necessary to maintain accurate moisture control. As the sheet leaves the press, it is usually run at a slight angle. By forcing the sheet to follow one roll for a few degrees it will peel with a minimum of waver. If the sheet is pulled directly from the nip it can follow either roll and will waver up and down.

On the horizontal size press the size is normally applied with one spout, on each side of the sheet, located at the center of the sheet. Sufficient quantity is applied to cause a small amount of excess to spill over the ends of the rolls. This run-off is caught in funnels and recirculated. The sheet is lead over a roll and directly down into the nip. If this roll has excessive deflection, wrinkles will be pulled into the sheet. However, sheet tension control is not as critical as with vertical size presses. As the sheet leaves the horizontal press, it is either permitted to wrap the press roll or it is stripped from the roll, and lead around a paper roll.

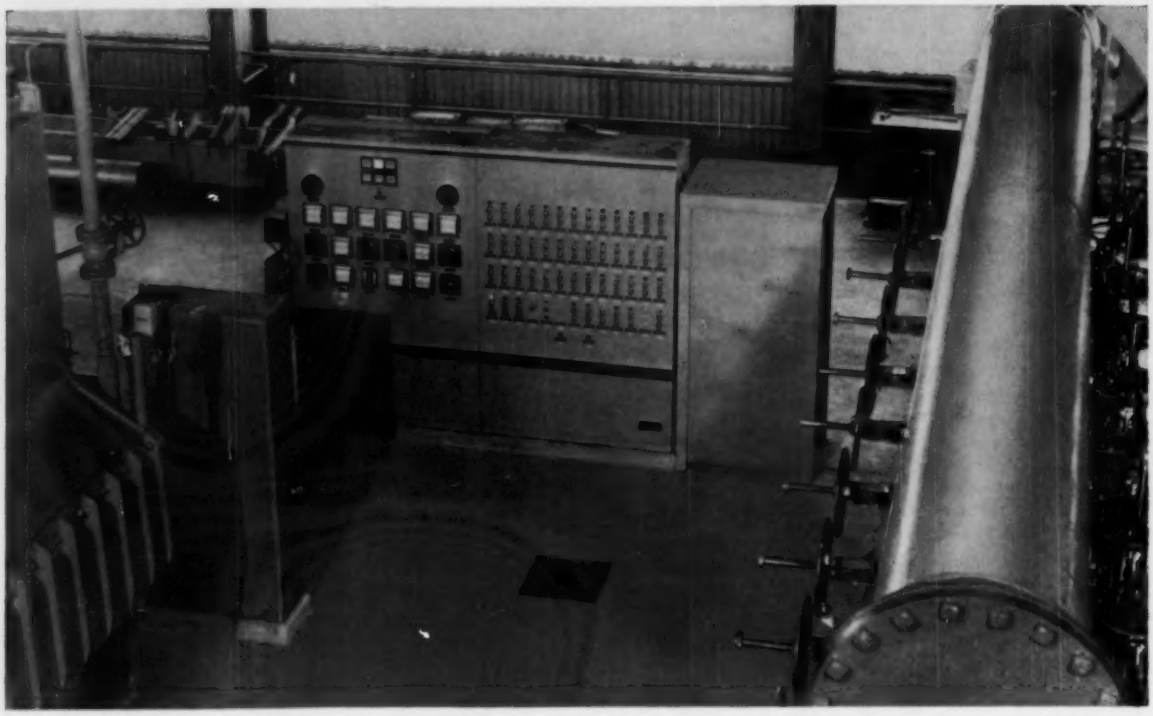
Roll Construction

Roll construction for horizontal and vertical size presses is identical except for a few features. Frequently the top rolls of vertical presses are made with about one inch of overhand. With the horizontal press, the rolls must be of identical lengths to prevent size spraying from the roll ends. The roll ends must not be radiused or "dubbed off" because this would affect overflow. Experience indicates that it is possible to apply heavier coatings with the horizontal press. This is because the depth of the pond in the vertical press is very small so that any tendency to force the size into the sheet is due purely to absorption and such velocity pressure as can be built up in the nip. In the horizontal press the nip is not only completely submerged but it also is subjected to a hydrostatic head. The horizontal press operation is actually more nearly analogous to a tub sizing operation. The fact that higher solids contents can be used in the horizontal size press is believed to be also due to this difference.

Rope feeding systems can be used with either type of press and are usually supplied. It is necessary to have a rope system with th horizontal press because it would be very difficult to manually feed the tail from under the press and into the dryer section. Also, size flows in these presses even during a sheet break. Because the excess size runs off the end of the horizontal size press rolls, the line of rope travel must be kept out of the stream path, particularly when no sheet is in the nip. This means that the rope sheave must be considerably smaller than the roll. The sheave radius is usually one to 1½ inches smaller.

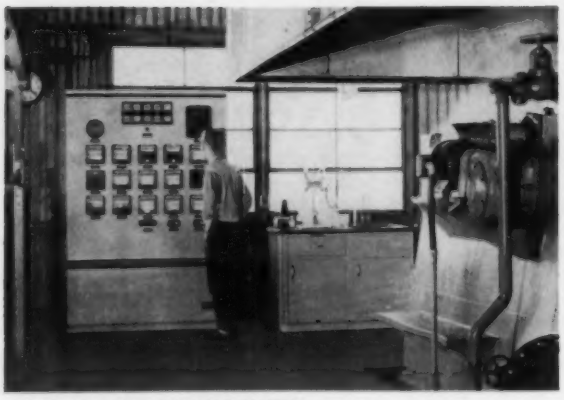
(Continued on page 36)

PHOTO REPORT:

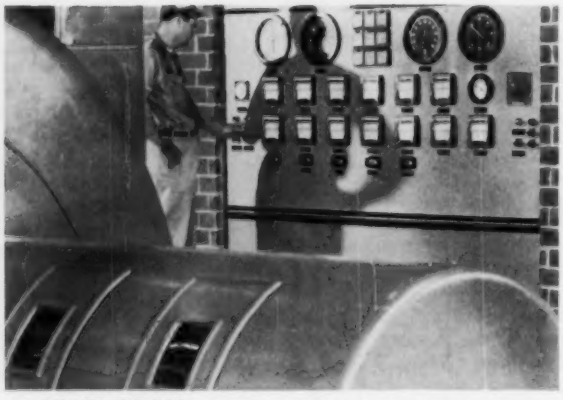


PULP MACHINE — WET END Control panel for wet end of pulp machine seen from upper mezzanine. At right are push buttons used for remote operation of all electrical equipment. On pipe standard at left, Foxboro d/p Cell Transmitter** senses level in machine head box.

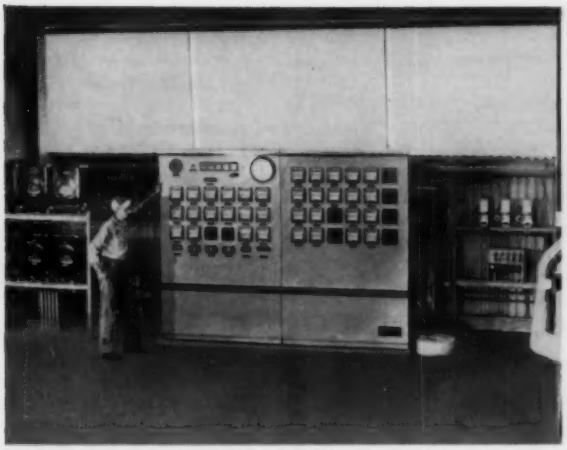
NEW CONTINUOUS PULP MILL OF GULF STATES PAPER CORP.



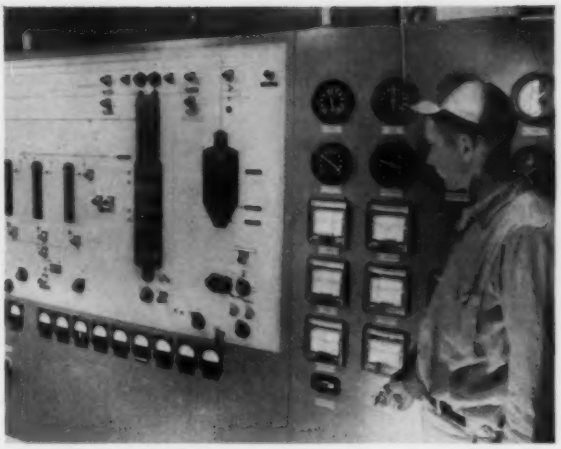
BROWN STOCK WASHERS Foxboro Consotrol Control Panel for three-stage Brown Stock Washers includes foam tank level and Save-all controls. Conductivity measurement of weak filtrate is basis for automatic regulation of shower flow to third stage washer.



TURBINE ROOM Foxboro Control Center for steam pressure reducing stations in background, with generator in foreground. Steam flows, pressures, and temperatures are recorded and controlled — steam flows totalized.



BLEACH PLANT Main control cabinet for five-stage bleach plant is typical example of how complete instrumentation with space-saving Foxboro Consotrol receivers results in convenient size panel. Operating consoles (not shown) are provided at the washers for control of speed, stock rates, and dilution flow.



KAMYR DIGESTER Continuous digester control panel features graphic representation of 300 T/D Kamyr digester system, blow tank included. Integral with the graphic section are push button and switch controls which provide complete remote operation for all pumps, feeders, and valves.

COMPLETELY INSTRUMENTED by Foxboro from variable to valve — that's the automation story at Gulf States Paper Corporation's new $25 million bleached pulp mill at Demopolis, Alabama.

More than 25 types of Foxboro instruments are used to measure, transmit, record and control over a dozen different variables. Variables that include: temperature, temperature difference, pressure, pressure difference, liquid level, conductivity, flow, motor load, speed, density, oxidation-reduction potential, pH, dew point, and moisture.

When designing their new mill, Gulf States standardized on Foxboro pneumatic Consotrol* instruments. Major reasons: 1) Foxboro's demonstrated ability and experience in the pulp and paper industry; 2) compact Foxboro panels reduced the size of their control centers and hence, helped keep building costs down.

Gulf States' plant represents one of the most completely automatic pulp mills in the industry today. Automation based on Foxboro's application-engineering know-how. If you're planning an expansion or modernization program, you can put this experience to work for you. Call your local Foxboro Field Engineer, or write **The Foxboro Company, 232 Norfolk St., Foxboro, Mass.**

*Reg. U. S. Pat. Off. **Trade Mark

BLACK LIQUOR EVAPORATORS Foxboro Control Panel for black liquor evaporators also includes recording and control stations for the causticizing area. Foxboro Dynalog* electronic indicators transmit pneumatic signals of flow, temperature and conductivity to the appropriate recorders and controllers.

FOXBORO REG. U.S. PAT. OFF. **INSTRUMENTATION**

for the Pulp and Paper Industry

(Continued from page 33)

Top or Bottom Lead-on Dryer?

Preferred sheet travel varies to some extent with the type of size press. When the sheet leaves the last dryer (usually a top dryer) it passes over a spring roll and in a vertical press it goes directly into the nip at a slightly downward angle. As the sheet emerges from the press it may take an up or down angle, depending on whether the lead-on is to be to a top or bottom dryer. It then passes over an expander roll and possibly a paper roll and into the dryer. The choice of a top or bottom lead-on dryer may be dictated by the sizing operation. When heavier coatings are applied, particularly to one side, it is always better to contact the opposite side against the first dryer in an effort to set the size. If both sides are coated, a decision must be made as to which side is more important. When there is a choice, the advantage appears to favor a top lead-on dryer with a vertical press for several reasons: (1) Cross machine access, (2) better expander roll wrap and (3) (where space is at a premium) a top lead-on dryer can be nested in closer to the press. Many operators prefer the top lead-on dryer because they believe that it gives better sheet control. In horizontal size presses the tendency seems to be toward leading the sheet to a bottom dryer. This is probably due to the fact that the sheet emerges from the press closer to the floor level than with a vertical press. Care must be exercised in leading the sheet over the expander roll as the angle of wrap may become quite great.

Drying Operation

Drying after the size press depends on speed, temperature, amount of moisture and degree of penetration. Examining a typical situation, and assuming for sake of simplicity that the paper is one foot wide; assume pickup of one pound of size per ream of 3000 square feet, with 10 per cent size solids, machine speed at 1000 f.p.m. and 50 lbs. sheet weight and desire to re-dry the paper to five per cent moisture: For every pound of size picked up nine pounds of water will also be picked up, resulting in sheet moisture of 19.5 per cent (leaving the press). At 1000 f.p.m. this means 60,000 feet per hour, or the need to evaporate 180 lbs. of water per hour per foot of width. Assuming evaporation rate of about 1.25 lbs. per foot per hour, will then require about nine 60 inch dryers. A rule of thumb: average conditions usually require the addition of 20 to 25 per cent of the number of dryers in the main dryer section as after dryers. One reason for increasing the number of dryers would be deep size peneration in which moisture migrates into the sheet is harder to drive out than surface moisture. It is necessary to run the first two after dryers cooler than the remainder of the section, to help prevent the dryer from picking the sheet. For the same reason, these dryers are usually not felted but doctored. After two dryers the size is sufficiently set to prevent further picking and a felt can be used. Recently, the use of Teflon coated paper rolls and dryers has been advanced because of its non-sticking tendency. Paper rolls can be wrapped with Teflon tape in the mill, but dryers should have the coating applied by a company specializing in this technique.

Size Press Potentials Increasing

Here are highlights from a paper on "Size Press Potentials," by Dr. P. H. Dixson, vice president of the Fox River Paper Corp.

The potential use of surface applications of materials by size tubs and presses has been greatly increased in the last ten years because of: (1) Advanced practical application of colloid chemistry in the field of stabilizers, fluidizers, dispersing agents and other materials. (2) Improvement of sizing equipment mechanically and improved equipment for metering, pumping and preparing surface treatment materials. (3) The gradual acceptance by paper users of the concept of papers designed for specific uses.

The employment of a top press helper drive has added considerable range to materials that can be applied with a vertical size press. Slippage of the top press roll when highly lubricative materials are present, is a very common problem. This damaging effect is often overlooked and materials applied to the surface of the paper are abandoned because they seem to produce curl, cockles, fuzz, streaks, etc. These are often due to uneven distribution of the material and sheet distortion from a slipping top roll in the vertical size press. Mr. Dixson said: "Although I have not been fortunate enough to have had experience with a horizontal press it would seem to me that this mechanical improvement greatly simplifies accurate nip pressure and positive drive of both rolls."

Range of Materials Applied

The bulk of materials applied with size presses are employed to improve writeability and pick resistance, lay fuzz, and improve fold, mullen and erasability. We should call this equipment a surface applicator because the "size press" is now used to correct or apply color, especially the new fluorescent brighteners, correct paper acidity, apply light-wash coats of pigments, improve dimensional stability, provide wet rub and wet strength, fireproof, improve pliability, or increase stiffness.

For all-out size press applications a press should have: (1) Driven top press roll (in a vertical press). (2) Accurate, controlled loading of top press roll. (3) Expander rolls to and from press. (4) Wide range and accurate press draw. (5) Teflon covered rolls after the press. (6) Teflon covered dryers (one to four) after the press. (7) Sufficient make-up tanks to provide all kinds of blends. (8) Accurate metering pumps for continuous metering of small quantities. (9) Temperature and preferably Baumé control of solutions.

Requirements for Satisfactory Size Press Coatings

Size press coating aspects, a field of vital interest in the paper industry today, was discussed by Harley Nelson, technical director of Allied Paper Corp.

The practice of applying coating to paper at a size press has been brought about by two main needs: quality and economics. The quality factor lies in a better surface for subsequent printing or coating operations and the economic reason lies in the fact that normal paper machine production can be maintained while producing a sheet with from two to six pounds of coating per side per ream. Coating on the size press costs usually no more than the fiber furnish. However, this may not hold true if, for example, some of the more expensive synthetic adhesives are used.

The first requirement for a satisfactory size press coated sheet is an acceptable base stock. (Imperfections in the base stock cannot be glossed over by the coating. Rather, they are magnified by the coating.) The sheet

Head table, Wednesday evening banquet, left to right: Harry Weston, executive secretary, American Pulp & Paper Mill Superintendents' Ass'n; E. F. Bahrenburg, vice president, Watervliet Paper Co., banquet speaker; B. H. Cooper, vice president, Kalamazoo Paper Co., toastmaster; Ward Harrison, president, Allied Paper Corp. and Dr. Alfred H. Nadelman, department head, Department of Paper Technology, Western Michigan University.

surface acceptable for size press coat- should be the result of proper beating and refining, closed formation (not necessarily from slow stock), and even distribution on the wire. The wet felts must be of the correct design and the subsequent pressing in the smoothing press should put a sheet into the dryer section with edges slightly more moist than the center, so that when the sheet arrives at the calender stack ahead of the size press, it is of uniform moisture across the web. The subsequent calendering will then lay down the surface fibers so that a flat surface is supplied to the size press nip. It is general practice to load the sheet with clay and/or opacifying pigments to get the required opacity.

Particle Size Important

Degree of sizing is governed by end use requirements and is usually the same as for uncoated grades. To prevent undue adhesive requirements, the paper must be moderately sized. It is also well to tint the base stock to the same shade as the coating color. It is important to watch the sheet moisture content, to run 4½ to 5 per cent moisture. When a clay and water slurry is applied at a squeezing nip only a small percentage of the clay particles get through the nip area. It is necessary to keep the particle size of the various items used in the coating formulation as near alike as possible, by using pigments of small particle size. Because the adhesives or chemicals used are smaller in particle size than the pigments it is necessary to select proper size pigments and to disperse and keep them dispersed until used. Normally used are coating clays, calcium carbonate and rutile titanium dioxide. Ground and finely precipitated calcium carbonates have been sucessfully used. The rutile TiO_2 grades are preferred.

For adhesives, starches of various types, animal glue, casein, synthetic latices (such as butadiene styrene, acrylics, polyvinyl derivatives), natural and synthetic gums as well as other resin formulations, use is, determined mainly by the end use requirements. Most of the clays used are slightly acid when received. This means that the deflocculating agents should be acid and to prevent protein hydrolysis, the acid component of the clay should be satisfied by alkali. The first can be met by using a deflocculent such as sodium acid pyrophosphate and the second can be satisfied by using from ¼ to ½ per cent of caustic soda, in solution form, prior to adding the protein adhesive. It has been found necessary to use about ½ of 1 per cent of sodium acid pyrophosphate on the weight of clay. Soaps such as calcium stearate, are another important formulation item used as internal lubricants, to prevent dusting (during calendering and printing) as a "molecular broom" with the ability to sweep particles through the press nip that otherwise would be rejected. Two per cent on the weight of the clay is generally sufficient. If the sheet is to be subsequently coated off the machine (after size press coating) an oxidized starch is normally used as the binder in the size press coating. The amounts used range from 25 to 35 per cent on the weight of the clay, with a medium to thin range viscosity oxidized starch preferred. For size press coated offset sheets, a protein type adhesive which can be waterproofed with formaldehyde, is recommended.

Typical Coating Formulation

A typical formulation preparation was given as follows:

(1) The dispersant is dissolved in the initially required amount of water.
(2) The clay is added, agitated and thoroughly dispersed.
(3) Caustic soda, dissolved in in water, is added to satisfy the alkali demand of the particular clay being used.
(4) Proteins such as casein, alpha or delta protein are added and then thoroughly wetted out. (This generally requires at least 30 minutes.)
(5) Temperature of the mix is raised to 130°F. by addition of live steam.
(6) A borax solution at 130°F., equivalent to 5 per cent on the weight of the protein, is added.
(7) A solution of ammonia equivalent to 10 per cent on the weight of the protein, is added.
(8) The mixture is agitated until the proteins are thorougly cut.
(9) The volume is adjusted with warm water to a point slightly under its final volume.
(10) A solution of formaldehyde, ammonia and water (quite dilute) is added carefully.
(11) The metallic soaps dissolved in warm water are added and the coating mixture is well agitated.
(12) The tinting agents are added in solution form and the volume is brought to its final mark.
(13) If the formulation calls for the addition of synthetic rubber compounds, these are added at the last step in this

sequence. (In this case the subsequent agitation must be kept at a minimum to keep the foam down.)

(14) If it is necessary to use foam killers or depressants, they are generally used just prior to screening.

When proteins are used it is not necessary to stabilize the latex suspensions but when starch is used with latex, the latex should be stabilized separately with a protein solution or one of the wetting agents which are so specifically designed. The above report concerns pigment coating in the size press with 4 to 6 pounds per ream per side of pickup, with solids of the coating color varied from 28 to 35 per cent to accomplish this.

Horizontal Size Press Experience at Rex

J. D. Lean, vice-president of the Rex Paper Co., where a horizontal size press is in operation reported on this mill's observations and experiences. (See PTJ Nov. 17, '58).

Rex films or coats on the horizontal size press, as differentiated from size press sheet impregnation treatment. The company has a Patton horizontal size press with the following basic specifications: One 18 inch diameter by 115 inch rubber covered roll with a D&J Plastometer of 25 to 30, and one 18 inch diameter by 115 inch face Microrock covered roll. The press is equipped with a hydraulic loading system. The unit was installed to replace a vertical size press. The Microrock roll is wrapped, and the press is driven from the rubber roll. The face pressure per lineal inch is approximately sixty-two pounds. This nip pressure has been varied down to fifty-five pounds and up to seventy-five pounds.

The first use of the press at Rex was a standard application of chlorinated starch at about six per cent solids. Soon the mill began to investigate the application of mineral solids. The following variables were investigated and controlled: solids content, temperature range, nip pressure, screening, pond depth, wet rub resistance, latex versus alkyd resin, foaming, sheet filming versus pigmenting, keying the topcoat to the priming coat, drier roll pickup of pigmenting starch and machine speed.

"These are by no means the limit of the questions for which answers had to be found. They are, however, typical variables, which will confront anyone who attempts to use a size press, as a coating machine," Mr. Lean reported.

At the present time the mill successfully prime-coats all of its papers made for coating stock. Pickup is approximately four and one-half pounds (25 x 38-500) of solids per side on a typical Rex sheet. On heavy weight base stock, coating as high as nine pounds per ream per side have been added, or twice what Rex uses currently.

Applying Starch Pigment Coat

Mr. Lean added: "Although we are commercially applying a starch pigment coat at the size press, we are not deluding ourselves. Much remains to be learned, much remains to be done. In a commercial venture, no operation, which does not pay its own way, is a practical operation. Our preliminary cost figures indicate the starch pigment coating before the final coat is paying its own way. Expenses are offset by savings. The improvement in the quality of the sheet is notable. Because we have had our present operation for only six months, and have been starch pigment coating only for the past thirty days, maintenance and roll replacement costs are not yet available. The horizontal size press is definitely more economical for us to service. I would recommend that at least one spare rubber roll be considered a part of the original equipment. In our opinion all coated book enamels will soon be double coated. Many and various are the methods of approach to this problem. The horizontal size press appeals to us and based upon our experiences so far, we believe we have found a satisfactory and practical approach."

Size Press Roll Grinding

John D. Dickson, Jr., sales engineer, Stowe-Woodward Inc., made the following observations about size press rolls.

From a rubber roll standpoint, a size press presents rough service. Unlike wet presses, the size press nip has no felt which can act as a cushion. This factor, combined with elevated temperatures, a sharp nip and higher pressures, offers a degree of torture to a rubber cover that is not easily borne. In the last few years steps have gradually been taken to soften the rubber covered roll slightly. Good sizing and maintenance results are obtained with a bone hard roll mated with one of 25 to 30 Plastometer. This combustion can be generally classed as standard. Some mills are using rolls as high as 60 P. against a hard roll, but these are usually specialized cases when heavy size impregnation is needed.

Many mills have tried reversing roll positions. In the vertical size press this would mean running the hard roll in both top and bottom positions. One advantage of running the soft roll on the top is obvious—the soft roll requires grinding more frequently and being in top position it is easier to remove and reinstall. There is, however, a well known disadvantage—the sheet tends to follow the harder roll. When this happens against the bottom roll, the problem gets more difficult at the time of a break.

Size press roll crowning is a nebulous thing; there are too many variables. Core wall thickness which can influence deflection is only one of these. Cover Plastometer and thickness and applied pressures are others. Mr. Dickson said: "We, in the rubber roll industry, have been subjected to some good natured criticism because of our attempts to increase roll grinding frequency. Many times we have been told that we are just trying to sell more rubber. Actually, the reverse is true and it has been proven many times. The time to grind size press rolls, especially the soft ones, is before you think they need it."

The surface of any rubber cover will oxidize and tend to get brittle in use and as this brittle surface continues to flex under operating conditions it will develop cracks. When these cracks are noticeable to the eye they are probably 1/16 inch to 1/8 inch deep and much rubber must be removed. Rolls must be ground to get below such cracks to avoid further spreading and enlarging. In most cases 1/32 inch radious rubber removal will true up the crown and insure a fresh rubber surface. A regulated grinding cycle will pay for itself.

Size press section speakers, left to right: Otis Whitworth, Black-Clawson Co.; Harley Nelson, Allied Paper Corp.; J. D. Lean, Rex Paper Co.; Morris W. Kane, The K. V. P. Co., moderator; John D. Dickson, Jr., Stowe-Woodward Inc. and Dr. P. H. Dixson, Fox River Paper Corp.

Size Press Discussion

Following the presentation of the papers highlighted above, the Wednesday afternoon session engaged in a question and answer period. Given below, in question and answer form, are notes taken during this discussion period. Because all members of this session on size presses were involved in the discussion, no attempt is made here to identify the individuals who answered the questions:

Q. Cockling is sometimes caused by too much moisture carried in the size press. How can you tell that this is a size press-produced cockling effect once the finished sheet comes off the machine?

A. This is a matter of experience. You can only positively identify this problem after having worked with it for quite some time.

Q. Mr. Lean, how much screening do you do on your horizontal size press?

A. We screen the return starch from the size press. We have found this to be mandatory. We also screen the discharge from the make-up tanks. We use Roto-spray screens.

Q. Mr. Lean, what type of pumps do you use in your starch delivery system?

A. We use tri-clover positive displacement pumps.

Q. What polymers are used in the soft roll covering materials?

A. The SBR rubber types are used. This is styrene, butadiene rubber, which is used most frequently for horizontal size press roll covers. The use of polyurethene is also being investigated but has so far not been used commercially.

Q. What do you recommend for doctoring Teflon covered rolls?

A. Our first advice would be: "Shoot the man who picks up any metallic scraping material." Soft plastics, the type used as windshield scrapers are the only materials that can be considered for doctoring Teflon. It is not usual to doctor these rolls because foreign materials sticking on these rolls is practically unheard of.

Q. What are the advantages of installing a smoothing press ahead of a size press?

A. Smoothing presses will decrease density. If it is desired to get a smoother sheet then, by all means, install a smoothing press. But it is likely that pickup at the size press will then not be so great because the size material cannot then penetrate into the sheet.

Q. How can one prevent size material water dilution when it is necessary to run water into the horizontal size press for lubrication and for temperature reduction generally?

A. Moisture mists have been tried and installed successfully.

Q. What are the recommended draws ahead of size presses?

A. It would seem that the shorter a draw the better off the operation will be. As short a draw as possible, with maintenance of sufficient working space, is recommended.

Q. Have infra-red or gas burners or similar size press after-dryers been tried?

A. One installation, using a pseudo air dryer is known. This installation blows air at around 190°F. at velocity of between 3,500 and 4,000 feet per minute. Generally, it would seem that infra-red or air blast dryers after the size press should have some definite benefits such as reducing the sheet surface marking caused sometimes by the first conventional after dryer.

Q. How does one prevent starch dusting on the offset printing press with bond papers?

A. There are a number of things that can be done: (1) Dilute the size. (2) Reduce internal sizing to get the starch picked up in the size press down into the sheet. (3) Add urea formaldehyde in small quantities. A good way to watch out for dusting is to take a few sheets of unhandled paper coming from the winder and shake them onto a black sheet. Experience will then provide a comparative index of dusting.

Q. Mr. Lean, at what temperatures do you run the solution in your size press?

A. We run starch size at approximately 160°F. and pigmented size at about 140°F.

Q. What about pond depth with the horizontal size press?

A. At Rex Paper Co. it has been found that pond depth is a very critical matter at all paper machine speeds. Dry streaks will develop when the speed is high and the pond depth is low. Generally, pond depth depends on the diameter of the rolls.

Q. Should size press rolls be heated before the sheet is introduced at start-up or after a prolonged break?

A. In the vertical press hot water is usually run on the rolls to get temperatures up and to keep the rolls lubricated before the sheet is introduced. In the horizontal size press a pond of size is already in the press, even though the sheet is not running through the press. This is be-

cause the pond is maintained even during a break and when grades are changed. It is generally recommended that size or water at operating temperature be introduced into size presses before introduction of the web.

Q. On the horizontal size press, which roll should be wrapped?

A. The peel-off of the sheet has a marked effect on the sheet quality and the surface condition of the sheet. It is common practice to wrap the hard roll although some soft rolls have reportedly been wrapped also. The sheet surface will be disturbed if there is improper lubrication at the wrapped point.

Calender Water Box Equipment Design

Paul Pringle, sales engineer, Beloit Iron Works, advanced the following thoughts on design of calender boxes. The ideal water box arrangement would be designed to meet so many contradictory requirements as to make it a design impossibility. For easy handling and movement, the box should be very light in weight, but to keep its shape, to withstand accidental damage in frequent handling and to avoid sagging and deflection, it should be very sturdy and therefore of heavy construction. The box should fit nicely into any space left after installing doctors with backs of substantial construction and also after leaving sufficient space for paper handling. The calender cooling air pipes and attachments usually also have priority.

When calender water box treatment is desired, the machine is fitted with two or more calender stacks. The boxes are used on the first or "wet stack." The boxes are located on an in-running nip as high in the stack as possible so as to take full advantage of the roll balance action. With light weight sheets, which are more susceptible to breaks after being re-wetted, the boxes are located at the lower points in the stack. The boxes are usually set in mountings permitting horizontal and vertical adjustment. In operation the rigid lip is set from 2 to 3½ inches below the nip and approximately ¾ inch out from the face of the roll. A flexible lip of rubber or synthetic material is used to bridge the opening between the rigid lip and the calender roll and to direct the fluid into the nip. Vibration or undue deflection make it difficult to provide uniform sheet treatment across the width of the machine. Aluminum or stainless steel fabrications are usually used because of chemical properties of the solutions being used. Admission of solution to the water box is usually at several points across the machine, particularly on the wider machines, to secure uniformity of action. In a single compartment box, liquid level is maintained by a series of adjustable overflow pipes set in the bottom of the box leading into a sloped header pipe which is welded to the bottom of the box, and in a double compartment box the level is controlled by a series of adjustable gates in the partition.

Controlling Sheet Moisture

Uneven treatment of a sheet at the water box can cause hard or soft spots in the reel. It can also affect sheet curl and, where color is applied, variation in the shade produced. Calender dryers between the two stacks are an advantage for controlling sheet moisture at the second stack. The installation of such dryers frequently results in considerable improvements in machine capacity and sheet quality. In one extreme case a 17 per cent production increase was reported, credited to the addition of calender dryers.

Calender plugging, when bringing the tail over the stack, can frequently be minimized by providing air showers, mounted on the bottom of the box. When the box fluid temperature is lower than the surrounding atmosphere, sweating frequently causes condensate to drip on the sheet. This can be prevented by providing adequate air circulation from the calender air system. Electrolytic action at calender boxes can be minimized with electrical ground connections between the boxes and the calender parts. To avoid dangerously slippery floors it is well to have sloped floors with good drains under the wet calender stack. Some mills have been successful in minimizing corrosion and erosion-caused calender roll pitting by careful roll re-grinding. Some evidence suggests that careful grinding and a high polish will make rolls resistant to the initial pitting action and will thus result in greater overall life. Some success with chemical control, by buffering the box solutions with materials such as sodium silicate or sodium nitrate, has been reported. Silicone compounds have been used to treat calender rolls surfaces. In this case the roll surface is first cleaned carefully and then rubbed with the solution.

Calender Treatment Potentials

Dr. R. A. Diehm of the Paper Technology Department of Western Michigan University examined some of the basics of calendering and calender treatment. Calendering of dry paper increases the apparent density without proportionately affecting bursting and tensile strengths. It is an action of compacting the paper and changing its surface characteristics. The effect on the surface is equal on both sides of the paperboard provided that the compositions of the top and bottom liners are the same. Smoothness is improved by calendering as the moisture content of the paper rises. Smoothing the surface of the paper slows the initial oil absorption rate, but has little effect upon the rate of internal oil penetration and absorption.

If paperboard prior to calendering is anisotropic, calendering may give a surface of variable ink receptivity and ink absorption due to the soft and hard spots in the paper. The sheet becomes more compact and dense in the areas of the hard spots, which will behave differently than those areas which remain soft because of less pressure applied in the calender nip. Sulphite and kraft liners on cylinder board cannot be calendered smoothly enough for a fine printing screen. Therefore, it has been necessary to apply some kind of treatment over them to provide the printing smoothness desired.

Optimum Moisture Content

When water is added to the surface of a hard paper the smoothing action of the rolls increases. Black spots develop from friction in the stack in places where the paper is too wet. The moisture content of paper for optimum effect in the machine calender runs from five to ten per cent. The maximum moisture in paperboard should be in the neighborhood of eight per cent. If a water finish or a water solution of some type is to be added at the calender, then the moisture content of paperboard should be below five per cent as it enters the calender. If a sheet is calendered too wet, the paper structure will be broken down and prac-

Calender treatment session speakers, left to right: Edward Stephenson, Sutherland Paper Co.; Dr. R. A. Diehm, Department of Paper Technology, Western Michigan University and general conference chairman; Paul Pringle, Beloit Iron Works and Joseph Cutrow, Otsego Falls Paper Co., moderator.

tically all secondary creep will be eliminated. A water finished paperboard may curl because of relaxation of strains built into the paperboard on the cylinder mold, presses, or dryers. It may also curl if a substance is added on the calender which shrinks upon drying. This may be controlled by the number of water boxes used and by the degree of sizing in the top and bottom liners of the board.

The nip pressure in the calender stack is determined by the weight of the rolls plus any additional pressure which might be applied. This means that the position of the box on the stack can be quite important. If the two surfaces of the board are alike, then one could not except similar treatments on both sides, if one water box were at the top nip and the other at the bottom nip of the wet stack. Ordinarily the water treatment as applied on the wet stack is as near the top as possible to give the maximum amount of calendering after the treatment is applied. Treatments on one or both sides are quite common and treatments on both stacks are not uncommon when high finishes are desired on heavy paperboard.

Brightness Decreased

Brightness is decreased because calendering increases density and transparency by the reduction of the number of interfaces which cannot reflect light. The depth of color shades will increase from 10 to 15 per cent as the air-fiber interfaces decrease. Opacity also decreases as the paper becomes smooth by decreasing the air spaces within the paper.

The property of the paper which is called hygrosensitivity needs to be explored further to determine its true effect upon calender applications. The rate at which water is taken up by the sheet is extremely important, considering the short period of time that free water is in contact with it. Calendering treatments in the water boxes give more uniform results when the liquid is applied at the same temperature as the paper coming into the stack or as that of the calender rolls. If there are areas in the calender boxes where great temperature differences exist, the expansion or contraction of the metal rolls might be sufficient to give variations in the amount of treatment applied in the nip. The molecular size of the particles in solution or in suspension has a pronounced influence upon the effects obtained in surface treatment. In spite of the fact that the sizes of large molecules are very small compared with the voids in the surface in a sheet of paper, experience has shown that dispersions of small size particles will penetrate deeper into the paper. Such treatments have the advantage of high solids and low viscosity, two very important properties.

All solutions, emulsions and dispersions applied to the surface of paper on the calender stacks must go through a rapid concentration stage if a film or a partial film is to be left on the surfaces of the paper. Practically all water in the treatment is absorbed by the paper. Although there are no dryers following the stacks, the paper is hot and there will alwaye be a certain amount of evaporation. It is extremely important that the treatment applied does not become tacky as it concentrates on its course through the calender. Many functional coating applications are tacky before they finally become dry. This type of material cannot be used in the calender boxes.

Improving Gloss Ink Printing

Certain types of natural and modified gums, water soluble cellulose derivatives and specially modified starches find considerable use in imparting sufficient resistance to oil penetration to improve gloss ink printing with a reduction of the amount of ink used. While these treatments have been very much worth while, surfaces with real functional characteristics could be prepared only if such treatments could be extended and improved. Considerable work has been done by using a combination of long and short molecular substances. The use of such a combination is predicated on the principle that the short molecules will be sucked into the voids as the paperboard expands upon leaving the nip, permitting the longer molecular substance to remain on the surface. While results of such treatments have not always given everything desired, they are not discouraging.

Most of the substances used for film formation in the calender nip have the power to form a bond with the cellulose fiber, and this property together with their high viscosity may be responsible for keeping them on the surface. These materials undoubtedly help to strengthen the surface of the paperboards. The chemical industry has done amazing things in the field of dispersions. The electrical charge of the dispersions can be regulated to make the dispersed substances adhere to almost any surface. The particle size of the dispersed material can be regulated in modern methods of polymerization. The solids content of the dispersions can be elevated to a point where continuity of films can be expected. If a certain amount of cold flow could be obtained in the calender nips following the one at which the treatment is applied, film continuity could be increased.

The films would form upon dehydration of the dispersion, leaving the dispersed material on the surface. Coalescence or clod flow in the nip would unite the particles into films. If this could be accomplished with-

out the film forming substances becoming tacky, paperboards with surfaces having true functional properties could be made on the conventional cylinder machine and the machine stack.

Converter Views Calender Treatment

Edward E. Stephenson, director of quality control, Sutherland Paper Co., discussed "Calender Treatment from the Converter's Viewpoint." Calender treatment is used to obtain economically some property or combination of properties that have functional or decorative utility in subsequent converting operations or to an end user.

Calender treatment is practiced to achieve or improve a great number of sheet properties: (1) Increase or decrease sheet absorption with: (a) Water and aqueous solutions. (b) Oil and non-aqueous mixtures. (c) Air and other gases. (2) Change sheet structure by: (a) Curl control. (b) Fuzz control. (c) Hardness and density. (d) Strength. (3) Change surface chemistry to modify: (a) Solubility. (b) Adhesion. (c) Provide a specific reaction. (4) Change optical properties, principally color and gloss. (5) Balance moisture content where moisture is critical. Calender treatment provides an opportunity to control moisture content within close limits by overdrying and using the calender boxes to add moisture.

Uniformity Important

Our modern technological society is based on high production with great individual productivity. This means that once a product has been designed by an inspired artist, it must be duplicated economically by competent artisans. To keep it economical, the number of individual decisions to be made during a run and after a set-up must be kept to a minimum. Any significant variations in a raw material necessarily requires a decision above and beyond the decisions normally dictated by equipment and operating conditions. Calender treatment is almost always the last operation controllable by the papermaker before his product reaches the converter. Calender treatment usually has its major effect on the surface properties of the board. To a printer, a laminator or a coater, the uniformity of that surface is of overwhelming importance.

While calender treatment is no panacea, it is splendidly adapted to the problem of providing a maximum of controlled surface variety with a minimum of stock and machine adjustment. Sheets tailored to specific surface requirements can often be made without web-break or other expensive time or material loss. In short, it gives the papermaker a chance to bring the bewildering multiplications of end use and converter requirements within the reach of economic reality.

Practical Calender Box Treatment

A semi-formal question and answer session on "Practical Calender Box Treatment" occupied the Thursday afternoon period. The panel, whose names have been given in the introduction, was moderated by A. P. Luey, executive secretary, Box Board Research and Development Assn. As was the case with the question and answer period following the size press session, the questions were answered by many members of the panel, augmented by discussion from the audience. For this reason, again, no attempt has been made here to identify the speakers or the questioners.

Q. What is the effect of viscosity variation on pickup of materials?

A. Generally, viscosity has little measurable effect on the amount of pickup. The solids content in the calender size material does, however, have more bearing on pickup. The surface being treated is quite uneven and it would seem that sheet levelness and sheet absorbtivity determine pickup, rather than does viscosity.

Q. What are the relative effects of two light coats with two boxes versus one heavy coat with one box?

A. One study of greaseproof coatings in which two boxes with sizing material of the same solids content were tested with the turpentine test, revealed that the second box improved grease proofing ten fold. A third box which was also part of this study did not, however, improve the grease proof resistance of this sheet appreciably. It is assumed that the first calender box treatment resulted in sheet impregnation while the second box gave the sheet a continuous film. It was found that three-quarters of the total pickup resulted in the second box.

Q. What is the relationship between solution temperature and pickup?

A. Some advocate running the calender box solutions cooler, based on the theory that hot gases exist in the voids or valleys of the sheet's surface and that the cooler size material will create a vacuum which tends to suck the solution into these valleys, so to speak. Other comments on this subject were the exact opposite, i.e. running the calender box solutions at higher temperatures than the sheet. Here, resulting advantages of viscosity changes were advanced as a reason. With a higher temperature calender box solution, the sheet will have more absorbtivity and there will be less sticking.

Q. What about pickup when the solution is at higher temperature than the sheet?

A. There will be higher pickup with solutions of raised temperature but the pickup is not in direct proportion to the change in viscosity. Some southern bleached kraft and board mills run the solutions in their calender size boxes as high as 190 degrees and feel very strongly about the resulting advantages. It was also commented that by running higher temperatures in the calender size boxes, materials with relatively long molecular structure can be used because of the resulting low viscosities. This is especially true when ink holdout materials are used.

Q. What is the best arrangement for increasing smoothness without increasing sheet density?

A. These two properties are, of course, opposed to each other. The less pressure carried at the stack, the less compact the sheet will be. That is when calender treatment must help to close the sheet. Higher viscosity materials often make the sheet more dense without however helping the smoothness. It was emphasized at this point that this question is not entirely a function of calendering but just as much one of papermaking, such as stock formulation, treatment of stock and sheet formation. Moisture content can have a definite effect on smoothness and dryers after the calender boxes may have an effect. One installation has two wet stacks followed by two calender dryers and then a finishing stack. As a result, the mill reports that it can carry one per cent of additional moisture.

Q. What about box position in the calender stack?

A. If you want to impregnate the sheet, place the box high in the stack. If you want to coat the sheet place the box low in the stack. More foam is usually experienced in a calender box if it is placed high in the stack, and one mill reports that more picking is experienced with a box placed high in the calender. On coated sheets, calender boxes placed high in the stack tend to blacken the sheet more.

Panel members, "Practical Calender Box Treatments" session, standing, left to right: Charles Jakeway, American Box Board Co.; Russell Lewis, Ohio Box Board Co.; William Manor, Consolidated Paper Co. and William Koreschel, Michigan Carton Co. Sitting, left to right: Leslie Peck, Mac Sim Bar Paper Co.; A. T. Luey, Box Board Research and Development Association, moderator and Joseph L. Waber, National Gypsum Co.

Experimental Paper Machine

One of the highlights of the third annual Western Michigan University Pulp and Paper Conference was the dedication of the school's new experimental paper machine. Known as the Lou Calder paper machine, after the Lou Calder Foundation which helped make the machine possible, the new equipment was formally presented to the college by Dr. John R. Fanselow.

The Department of Paper Technology has installed this machine and its auxiliary equipment for three main purposes: (1) For training students in the department. (2) For student and faculty research. (3) As a service to the industry, both to paper mills and suppliers, for fundamental or applied research.

This new experimental paper machine, a fourdrinier, is designed to produce a 24 inch web at a speed of up to 500 f.p.m. and a production of 250 pounds of paper per hour.

"Two Challenges"

F. E. Bahrenburg, vice president of the Watervliet Paper Co., addressed the conference at the Wednesday evening banquet. Some of Mr. Bahrenburg's comments are presented below.

"The first challenge is what I call the loss of individual pride in achievement. As technical men, as managers, as teachers, you have clearly demonstrated that you are not victims of this widespread malady but rather masters of it. Therefore it is you who will have to pave the way in solving this problem. Today we have submerged the individual so that his personal initiative, his craving for recognition or a job well-done, goes unrecognized all too frequently. This submerging process may go back all the way to childhood. Many parents have become too busy, too careless, to lazy to maintain the family circle. You know the results.

"In my opinion, we must work out techniques to develop a community of interest; we must have a grass roots movement right back to the very heart of the family. Many individuals feel that a living is owed them, that they can spend their way to success and security by grabbing for more and more and going further and further into debt. By applying the principle of individual contact and communication at home, then in schools, we can open the door to again securing the individual's pride in achievement.

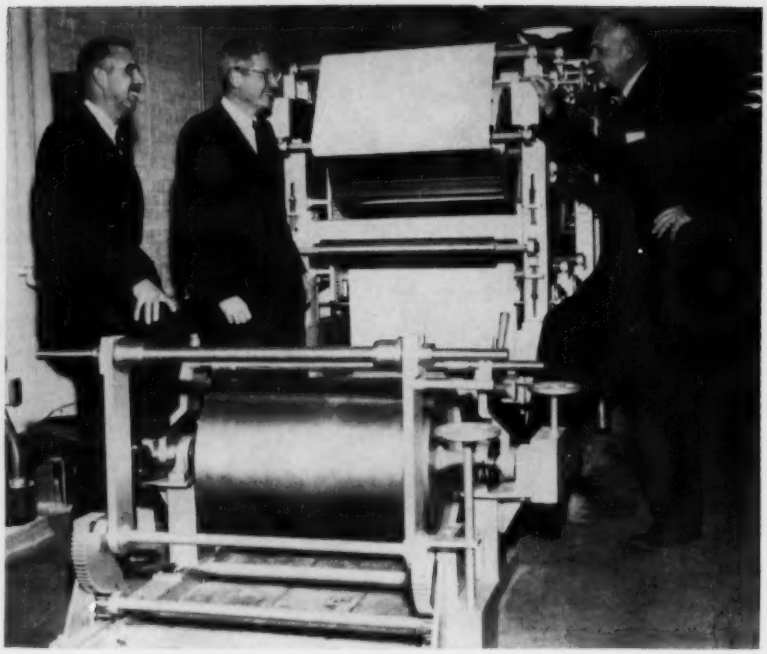
Participation in Politics

"Our second challenge is politics—just plain community politics. It is a challenge that must be accepted by each of us whether we be technician, technical director, supervisor, manager, teacher or professor. To preserve our four freedoms, to keep our country sound and stable, we must all participate in politics sooner or later, at least at the community level. 'Politics is in business; let's get business back in politics.' This is a quotation you will be hearing over and over again.

"There has recently been a great renaissance in thinking and action by

business men across the country who, as individuals, did not participate in politics, nor did their companies in any measure for many years. A bird's eye view of this movement is presented in the new and unique program set up last year by the Manufacturers Association of Syracuse. The project represents a multi-company approach to politics that cuts across a variety of industries. The objective is simple: The training of business people at various levels in the political facts of life, particularly as those facts affect the high cost of doing business in the State of New York. From this training will come actual participation in the political arena by the trainees themselves.

"If your community has not yet taken an initial step to get business into politics, why not take the initiative with the top management of your company? Let us remember that freedom, like a receding hairline, is not lost all at once."



Three paper people, who have done much to make the experimental paper machine at Western Michigan College a reality, gathered at the dry end during the dedication ceremonies, left to right: W. A. Kirkpatrick, consultant, co-founder of the School of Paper Technology (with E. E. Ludwig of Bermingham & Prosser); Dwight L. Stocker, president, K. V. P. Co. and retiring chairman of the school's Advisory Committee; Burt Cooper, vice president Kalamazoo Paper Co., newly elected chairman of the Advisory Committee and president of the Paper Technology Foundation, Western Michigan University.

Refresher Courses

Harry Weston, executive secretary, APPMSA, discussed pulp and paper courses in his luncheon address. Here are a number of highlights of Mr. Weston's remarks.

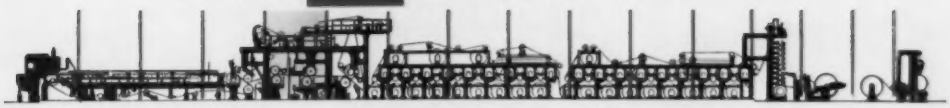
"No one will deny that the job of making a living is becoming more and more complicated. If it were not so why is there so much talk these days about security and the loss of it? Additional training and refresher courses are a great aid in this area."

Dr. Alfred H. Nadelman, Western Michigan University, Department of Paper Technology and Ward Harrison, president, Allied Paper Corp., look over the experimental paper machine's wet end.

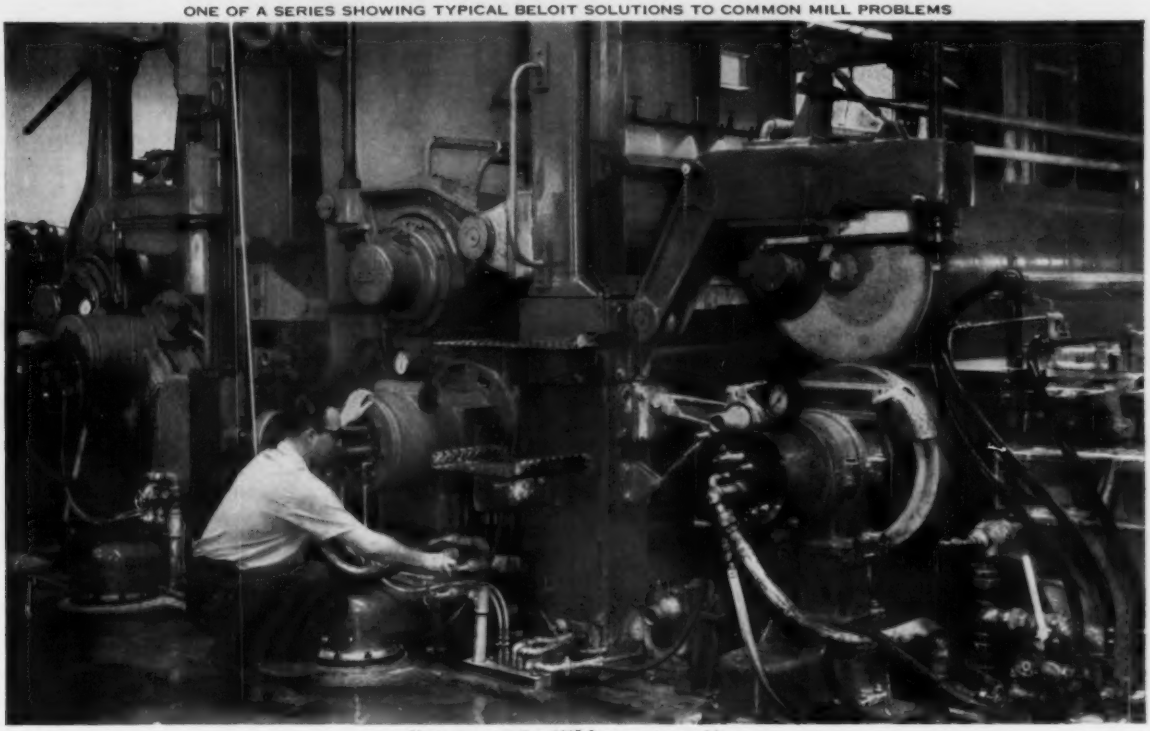
Mr. Weston then briefly outlined the history and development of technical education in the paper industry. The first course in Pulp & Paper at the University of Maine dates back only to 1913. And since then the other courses of study have come in. The most recent one is the course at Miami University in Oxford, Ohio. Mr. Weston said: "Here is also where the trade association, which emphasizes an educational program as a service to its members, fits in.

Such an association may be likened to a continuation school—a graduate school—which gives no degrees but is definitely a venture in cooperative adult education." He likened the matriculation of a student in college to the acceptance of an application for membership in an association. "Just because a student matriculates and a man fills out an application to join an association doesn't mean in either case that either one will get from what he hopes to get from it. It takes work and application besides," Mr. Weston said.

BELOIT UNIT MODERNIZATION



ONE OF A SERIES SHOWING TYPICAL BELOIT SOLUTIONS TO COMMON MILL PROBLEMS



New press section 108" fine papers machine

Speed limited by drying capacity?

Moisture content across sheet not uniform?

Added grade versatility desirable?

Nip pressures limited by crushing?

Beloit Suction Rolls help lower operating costs

Get maximum sheet dewatering at minimum cost with Beloit suction rolls. Your machine can run better with fewer breaks at increased speeds and improved operating efficiency.

A properly designed press section with Beloit suction rolls can solve the problems listed at the left. In addition, felt life can be lengthened, sheet finish improved, dryer section steam pressures lowered, steam consumption reduced, and shadow marking reduced.

There's a Beloit suction roll design for any press section—suction pickup, suction press, suction pressure, suction transfer, suction felt, suction wringer, suction hot press.

» **ACT!** *Write today for information about the new Beloit suction roll for your machine. Write to Beloit Iron Works, Beloit, Wis.*

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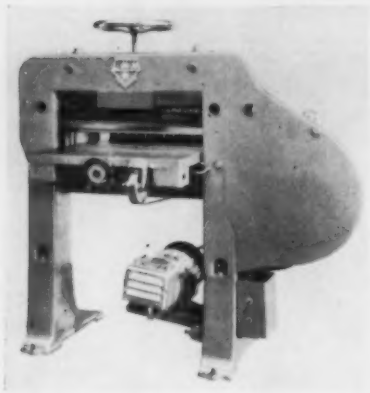
your partner in papermaking

NEW EQUIPMENT & SUPPLIES



Paper Cutter Uses Less Power

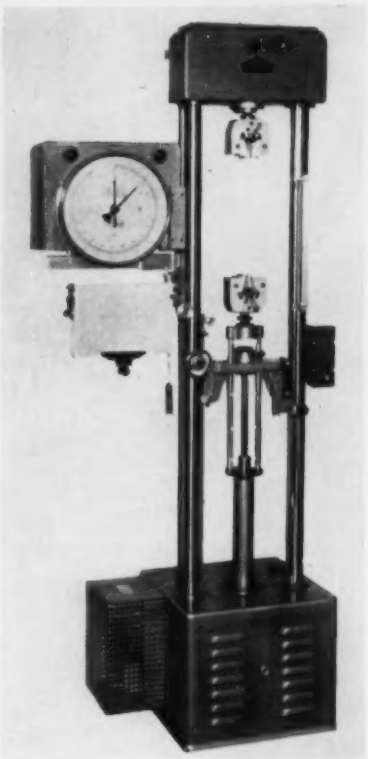
A low cost power paper cutter in small press sizes up to 17" x 22" has been introduced by Michael Lith Sales Corp., 143 West 45th Street, New York 36, N. Y. In a statement by Michael Golde, president, it was pointed out that a unique feature of this new machine is the economy achieved in operation — the motor runs only when the actual cut is made permitting possible savings of over 75 per cent in electricity.

The "Michael-Miracle" — Size 22 5/8 inches has many improved features for better cutting operation: thirty strokes per minute, automatic return of knife after each cut, a combination 2 h.p. motor and electromagnet brake and for maximum safety two handed electric jam-proof push-button operation plus two non-repeat devices with two safety lights. Standard equipment includes one table light, one extra blade, 3 cutting sticks, steel tape, tape magnifier and a tool set.

Versatile Tensile Tester Made in W. Germany

The new "Frankotron" electronic tensile strength testing machine, model no. 656a, now marketed by the firm of Karl Frank G.m.b.H. Weinheim-an-der-Bergstrasse, West Germany, is designed for carrying out tests on tissues, fabrics, paper and a variety of other materials when testing depends upon certain temperatures.

Firmly installed impulse generators in bridge connection indicate forces on a large dial. This indication is nearly exempt from inertia. The force generating device is temperature-compensated between —10° C and 65° C. Accuracy is guaranteed by the manufacturers to within plus or minus one per cent from 5 kg. to 1000 kg. load limits.



The drive apparatus is a three-phase, 220/380 volt, 50 cycle, 4-conductor line motor with push-button controls. For protecting the machine the drive is automatically stopped after reaching the maximum capacity of each of its six measuring ranges. The machine is also automatically halted at the break of test specimens. Speed of load application is infinitely variable between 5-50 mm/min.; return stroke is accelerated to 1500 mm/min. A push-button control can uniformly switch the advance and return strokes to permit hystersis analyses.

The elongation measuring mechanism features an electro magnetic decoupling device. The elongation scale is graduated from 0-800 mm. as well as in per cent on 180, 200, 300, and 500 mm. tests lengths (others available upon request). Minimum test length is 10 mm.; maximum is 600 mm. Maximum distance between the grip heads is 810 mm. with a ram stroke of 800 mm.

Available accessories include quick-action grip heads for plastics and rubber-like materials, wires, etc.; devices for transverse tests and compression tests; gears with accelerated stroke; diagram recorders; devices for automatic hystersis tests and constant-load tests; and devices for slow-load variations.

New Speed Changer Makes Smooth, Instant Variations

Introduction of the Vari-Tex speed changer line in horizontal and vertical units for smooth, instant speed variations has been announced by Allis-Chalmers.

Termed highly versatile by the company, the new speed changer's four position motor mounting and two position gear mounting makes it possible to readily adapt the unit to varying space conditions. Its one-piece motor and driver sheave shaft supported between bearing at the ends reduces shaft deflection and increases efficiency. Other features include low weight per horsepower, small physical size, "in-service" lubrication, large case openings to permit easy internal maintenance, and bolt hole mounting dimensions on vertical units corresponding to standard NEMA dimensions.

An easy to read speed range in-

dicator mounted adjacent to the hand wheel provides quick, accurate speed indication. All disks and shafts are splined for positive power transmission with no individual disk keys to work loose. The speed changer's overall electrical input to mechanical out-

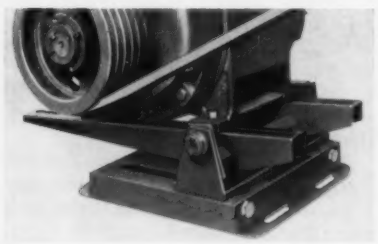
put efficiency is reputed to approximate 78 percent.

Because the speed changer is designed primarily for constant torque applications, speed ratios are dependent upon size. Four case sizes are contemplated with a maximum speed ratio of 10 to 1 in the 1, 1½, 2 and 3 hp units and 4 to 1 in the 40, 50 and 60 hp units; maximum ratios of the intermediate units will be 6 to 1.

Each of the units can be assembled to provide intermediate ratios of 5 to 1, 4 to 1, 3 to 1, and 2 to 1, using an 1800 or 1200-rpm standard squirrel cage motor in open, totally-enclosed, explosion-proof, construction. A full complement of single, double and triple reduction gears is contemplated to obtain speed variations in the ultra low speed range.

Stepless speed changes are obtained by rotating an external hand wheel which is directly connected to the mechanically adjusted driver sheave. Rotating the hand wheel increases or decreases the pitch diameter of the driver sheave. The driven sheave is spring loaded and automatically changes pitch diameter; as the driver sheave is increased in pitch diameter the drive sheave decreases in diameter, and vice versa.

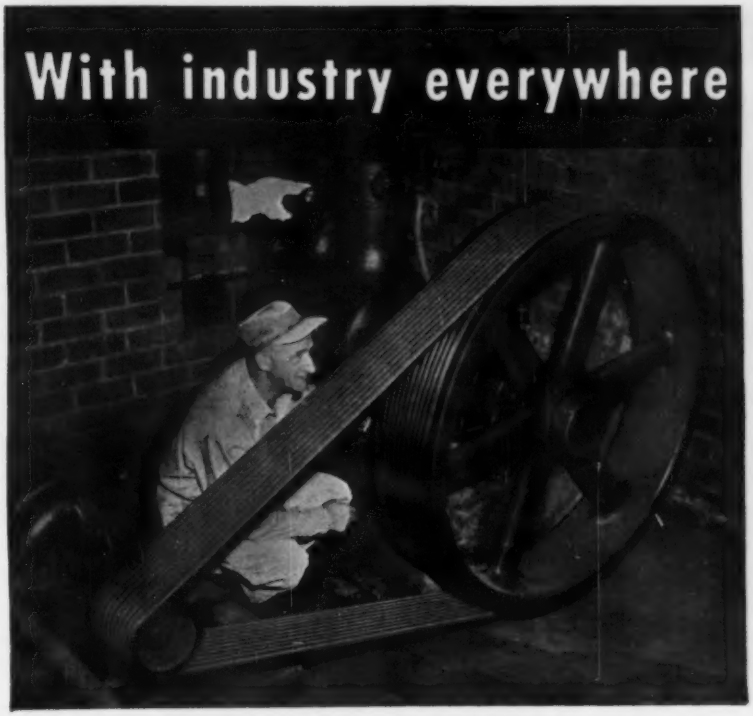
The center distance between driver and driven shafts is maintained without use of internal idlers when special wide range belts are used. Installations requiring remote control equipment are easily handled through use of electrical pneumatic, or hydraulic pilot systems.



Tilting Motor Base Provides Automatic Belt Tension

A new tilting motor base for automatic belted drive tension control under varying load conditions accommodates all NEMA sizes through frame 505 as well as for special applications requiring larger frames. Engineered on the principle that action and reaction are equal but opposite, the motor base's reactive torque is directly proportional to the horsepower.

The new motor base is produced by the Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.



the No. 1 choice is the V-belt with concave sides

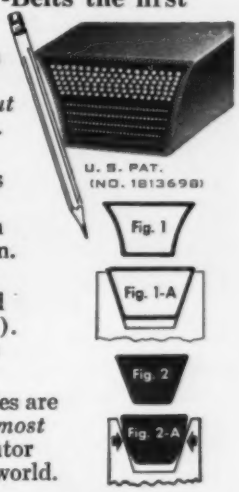
It is easy to see why concave sides insure far longer belt life... and make Gates V-Belts the first choice of industry everywhere.

Just *make this simple test:* bend a Gates V-Belt as if it were going around a sheave. Feel how the concave sides (Fig. 1) *fill out* ... become perfectly straight (Fig. 1-A).

Note how this belt thus makes full contact with the sides of a sheave ... grips the sheave evenly, distributing wear uniformly across the sides of the belt. Uniform wear lengthens belt life — keeps costs down.

With a straight-sided belt (Fig. 2) the sides *bulge out* when the belt is bent, and wear is concentrated on the bulge (Fig. 2-A). Uneven wear shortens belt life — increases belt costs.

Because Gates V-Belts with concave sides are so universally preferred, they are also the *most widely available.* There are Gates Distributor stocks in industrial centers throughout the world.



The Gates Rubber Company, Denver, Colorado

Gates World's Largest Maker of V-Belts TPA 351

Gates VULCO ROPE Drives

PJT NEWS OF SUPPLIERS

J. Miller Byne III

Food Machinery and Chemical Corp., Buffalo, N. Y. J. Miller Byne III has been assigned to the southern sales territory for Becco Chemical Division.

Mr. Byne will operate out of the Charlotte office, traveling in North and South Carolina.

Norton Co., Worcester, Mass. Ralph M. Johnson, vice president has retired as director of sales. The announcement was made at Norton's 74th Annual Stockholders' Meeting recently in Worcester. He was re-elected a director and vice president, and will be retained as a consultant for one year. He retired also as a director of Behr-Manning Co., a Norton division located in Troy, New York.

Hills-McCanna Co., Chicago, Ill., announces the opening of their Gulf States District office at, 4815 Port Arthur Road, Beaumont, Texas. This office will service the states of Texas, Oklahoma, Louisiana and Arkansas and will be under the direction of V. M. Barber.

Allied Chemical Corp. Appointment of Solon D. Fisher effective February 1, 1959, as manager of the St. Louis, Mo. sales branch, Solvay Process Division, was announced by Arthur Phillips, Jr., vice president. Mr. Fisher succeeds Elmer J. Seener who is retiring after more than 40 years with the company.

here is the world's smallest and simplest strip chart recorder!

- AMPLE STORAGE: Contains 63-ft. chart roll, or 31 days' recording at one inch per hour. Useful chart width 2 5/16".
- ACCURATE: Galvanometer pointer swings free for maximum accuracy, being clamped briefly for marking.
- INKLESS: Recording process is completely dry, utilizing special pressure sensitive paper. Method provides remarkable definition.
- RECTILINEAR: Advanced design provides true rectilinear recording free from distortion.
- RELIABLE: Positive synchronous motor drive with sprocket engaging holes in paper for accurate time indication.
- VERSATILE: Portable or panel mounting models. Stocked in a variety of scales and chart speeds.

WRITE TODAY FOR LITERATURE

*Subject to change without notice.

rust industrial co., inc.
130 Silver Street, Manchester, N. H.

C. B. Harding

K. H. Smith

Midland-Ross Corp. The election of Charles B. Harding, senior partner of the investment banking firm of Smith, Barney & Co., and Kent H. Smith, acting president of Case Institute of Technology, to the board of directors has been announced.

Messrs. Harding and Smith will fill two vacancies in the eight-member board of Midland-Ross resulting from the deaths last year of Percy W. Brown, partner of Hornblower & Weeks, and Harold C. Richard, a director of the Manufacturers Trust Co., of New York.

Allis-Chalmers Industries Group. E. E. Strickland, formerly manager of industrial sales for the New York district has been appointed manager of general products division sales for the Group's Northeast Region. His headquarters will be in New York.

Mr. Strickland came to Allis-Chalmers in 1949 and since 1950 had been associated with the firm's New York district.

Joseph Varacalli, formerly distributor supervisor for the Northeast Region of Allis-Chalmers has been appointed supervisor of original equipment manufacture and distributor sales for the New York district.

Mr. Varacalli has been associated with Allis-Chalmers New York district since 1946, starting there as a sales correspondent.

Appointment of R. H. Porterfield as manager, Industrial Sales, New York district, and of W. T. Farnsworth as manager of the Hartford (Conn.) district, has also been announced.

Mr. Porterfield had been manager of the Hartford district since 1954 Prior to that he had been manager of the Providence district for eight years, and before that was a sales representative in the New Haven office.

Mr. Farnsworth had been a sales representative in Allis-Chalmers Hartford district since 1953. Prior to which he had been a representative in the New Haven office.

Modern Methods of Mechanical Pulp Manufacture

Recently published, this book comprehensively covers all aspects of groundwood pulp production. The author, K. H. Klemm, has a broad knowledge of groundwood manufacturing methods and has been associated with groundwood mills on both sides of the Atlantic. Price: $5.00.

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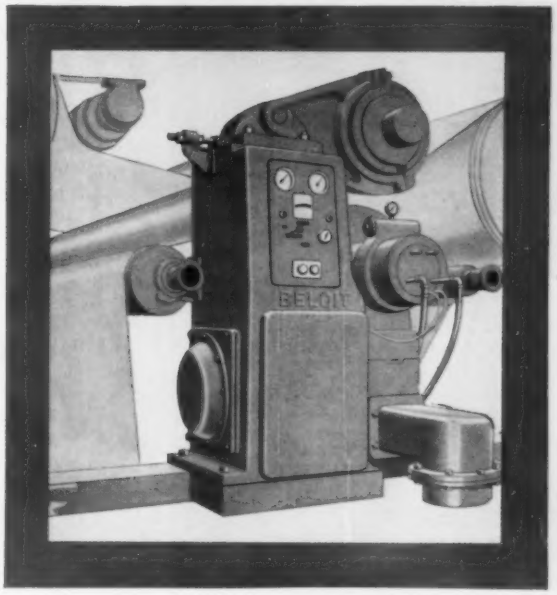
BELOIT UNIT MODERNIZATION

ONE OF A SERIES SHOWING TYPICAL BELOIT SOLUTIONS TO COMMON MILL PROBLEMS



Beloit unit press frames

- Sheet moisture varying due to nonuniform nip pressures?
- Frequent adjustments to loading system required?
- Operating speeds restricted by low nip pressures?

Beloit Unit Press provides optimum press performance

A Beloit unit press can be installed on any machine. Its outstanding feature is frictionless *air diaphragm loading*—resulting in uniform loading at front and backside.

If higher operating speeds are restricted by an outmoded press, then this is the time to consider a Beloit unit press.

» **ACT!** *Write for facts—or let a Beloit Sales Engineer show you the advantages of a Beloit unit press. Write to Beloit Iron Works, Beloit, Wis.*

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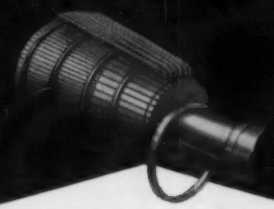
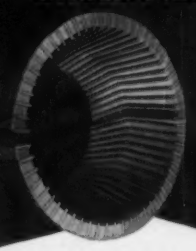
You'll Get Longer Life, Better Performance With
BLACK-CLAWSON
X-66 JORDAN PLUGS



High strength, BlaCaloy (ductile iron) castings—precision machined. Special Mox 4 bands hold bars firmly in slots—with a full 1 inch side metal support both sides of bars—full length. Rotation of plug can be reversed for maximum jordan efficiency.

Fillings available in all materials. Full length beads on each side of bars prevent spacers from rising.

Super-Rigid
BULLDOG
SHELL FILLINGS



Write for Bulletin 22

The original pre-assembled filling—for all makes of jordans.

Assembled in special jigs for rigidity and perfect symmetry. Every bar and spacer keyed with heavy bands and reinforced for maximum strength.

Shipped to You in a Strong Fibre Container

Lighter, easier and safer to handle. Fillings stay clean and dry. Facilitates storage and inventory checks.

Available only from:
THE BLACK-CLAWSON COMPANY
SHARTLE DIVISION
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Allis-Chalmers Industrial Group. Assignment of two new sales representatives to its Northeast Region has been announced.

They are Kenneth H. Wahl, Hartford district, and Harold H. Hood, Boston district. Both are graduate mechanical engineers and recently completed Allis-Chalmers training course.

Mr. Wahl received his degree from Ohio State University and Mr. Hood was graduated from Alabama Polytechnic Institute.

J. R. Hanzlik

Manchester Machine Co., Middletown, Ohio. J. Robert Hanzlik has been promoted to assistant chief engineer.

He joined Manchester in October, 1954, as a senior design engineer, and remained in that post until his present promotion. Before that, he had been a project engineer with Scott Paper Co. at plants in Pa. and Wis.; and with the Froetert Malt Co. in Milwaukee.

Manchester, which manufactures custom-built papermaking machinery and component parts, recently announced plans to move into a new $1,500,000 plant.

Otto Berggren

Huyck Felt Co., Rensselaer, N. Y., announces the appointment of Otto Berggren as field service engineer for eastern New York and portions of Vermont. Mr. Berggren received his degree from the paper school of New York State College of Forestry and has considerable practical papermaking experience. Before joining Huyck, he was employed as assistant superintendent with Stonebridge Paper Co. and by Personal Products Co. Previously, he worked in Huyck's development department developing practical means for improving felt performance and press section efficiency.

D. P. Michel

Bauer Brothers Co., Springfield, Ohio. Donald P. Michel has been appointed chief electronic engineer.

According to Roger J. Shouvlin, Bauer vice president-administration, this appointment reflects the company's participation in the current trend toward automation as Mr. Michel specializes in designing control systems for Bauer equipment.

Herman Langbehn

The Stanley Works, New Britain, Conn., Stanley Steel Strapping Division. Herman Langbehn has been named sales representative in Central California. Mr. Langbehn joined Stanley in October, 1958 and was previously a sales representative for O. M. Scott & Sons of Marysville, Ohio. Since joining Stanley Steel Strapping, he has participated in intensive sales training programs including the use and repair of steel strapping tools.

D. R. Alexander

J. O. Ross Engineering Division Midland-Ross Corp., has announced the appointment of David R. Alexander to its sales staff. Mr. Alexander, a 1956 graduate of the University of Maine Pulp and Paper course, has been with the designing department of the company since June, 1956. He will make his headquarters at the Boston office.

Pulp Paper and Board Mill Maintenance

Based on actual in-plant experience and prepared by well known men in the paper industry, this 126 page book brings you in easy to read language procedures for plant maintenance of kraft mills, semi-chemical mills, bleach plants, fourdrinier and cylinder machines, stock preparation equipment, and other machinery used in pulp and paper making. Price: $2.50.

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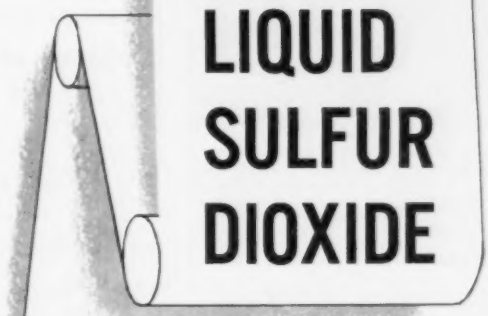

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Tennessee's Liquid Sulfur Dioxide is a most efficient and economical anti-chlor. Removes residual chlorine and other materials which cause color reversion or yellowing with age. It also eliminates excessive residual chlorine in water.

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OBITUARIES

Joseph A. Quinlan, 69, vice president of the St. Regis Paper Co., died at White Plains, N. Y., Jan. 17.

Mr. Quinlan started work with St. Regis in 1920.

William Henry Bryce Sr., 63, nationally-known executive in the wax paper industry died Jan. 17, in Bay Memorial Hospital at Panama City, Fla., while vacationing with his family.

NEW MICROMETER graduated in ONE-TENTH of ONE-THOUSANDTH of an inch

for fine calipering of Thin Materials

This precision instrument gives direct-reading thickness measurements of Papers, Tissues, Plastic Films, Foils . . . any sheet stock up to .050" thick. P.S.I. pressure meets ASTM and TAPPI Standards. Write for complete data and prices for this and other Cady Instruments.

Burst Testers • Micrometers
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Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

1958	Dec. 20 92.4	Dec. 27 55.8	Jan. 3, 1959 76.6	Jan. 10, 1959 90.6r	Jan. 17, 1959 89.8
1957	Dec. 21 92.0	Dec. 28 49.4	Jan. 4, 1958 75.5	Jan. 11, 1958 90.0	Jan. 18, 1958 89.1

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	—	—	—	—	—	—	—	—	—	—	—	—	—
1958	86.9	89.5	89.5	88.4	87.2	87.2	75.3	89.6	86.5	91.6	90.4	83.1	87.1

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1952	1953	1954	1955	1956	1957	1958	1959
Year to Date	—	—	—	—	—	—	—	—
Year Average	88.6	92.3	91.6	94.0	97.9	90.9	87.1	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

1958	Dec. 13 94	Dec. 20 91	Dec. 31 55	Jan 10, 1959 78	Jan. 17, 1959 93
1957	Dec. 14 92	Dec. 21 93	Dec. 31 45	Jan. 11, 1959 88	Jan. 18, 1959 90

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	—	—	—	—	—	—	—	—	—	—	—	—	—
1958	80	86	88	84	84	86	76	93	90	95	92	81	86

† *Percents of operation based on "Inch-Hours" reported on a 6-day basis.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Jan. 17, 1959	TEN DAYS ENDING Jan. 10, 1959	CUMULATIVE TO DATE Jan. 1 to Jan. 17 inc., 1959
% Activity	93%	78%	85%
TOTAL	305,778	303,880	609,783
Liner	107,827	108,903	216,855
Corrugating Material	47,278	45,183	92,461
Chip & Filler Board	4,870	4,645	9,515
Total Containerboard	159,975	158,731	318,831
Folding	54,427	48,925	103,352
Set-Up	12,497	10,439	22,936
Special Food Board	26,503	28,977	55,480
Other	52,376	56,808	109,184
Total Boxboard	145,803	145,149	290,952
TOTAL ORDERS			
Received	269,666	316,150	
Unfilled End of Week	379,895	416,078	

Alvin H. Johnson & Co.

INCORPORATED

Consulting and Designing Paper Mill Engineers

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PAPER MILL DESIGN PROCESS ENGINEERING POWER PLANTS

STRUCTURAL AND ARCHITECTURAL DESIGN

REPORTS APPRAISALS ESTIMATES AND SURVEYS

"Frightened to death" is no figure of speech where cancer is concerned. Each year thousands of Americans lose their lives needlessly because they were too terrified about cancer to even learn facts which could have saved their lives! Learn how to protect yourself and your family by writing to "Cancer," c/o your local post office.

American Cancer Society

HANDMADE PAPERS OF JAPAN

THE HANDMADE PAPERS OF JAPAN by Thomas Keith Tindale and Harriett Ramsay Tindale. This study, which is the result of several years of research in Japan, is one of the most ambitious works on the subject of papermaking which has ever been attempted. Here is a work, indeed, which is not only a distinguished history of this unique craft, but a veritable museum of paperiana—a collection which contains: actual samples of fabulous old and rare papers, a volume of magnificent contemporary papers, and a portfolio of exquisite watermarks. We believe that these particular features, which necessarily limit the size of the edition, can never be rivaled.

Vol. I. The Handmade Papers of Japan.
Introduction by Dard Hunter and Bibliographical Guide for Students of Japanese Hand Made Papers by Bunsho Jugaku. *Complete history and description of papermaking in Japan,* supplemented with botanical drawings, and a series of 32 full-page photographs by the distinguished photographer, Francis Haar. The text also includes *facsimile hand-colored reproduction, with translation, of the oldest Japanese illustrated work on papermaking — the KAMISUKI TAIGAI,* which was done in 1784.

Vol. II. The Seki Collection.
Portrait and biography of Mr. Seki, with 187 actual mounted specimens of paper from his collection. These samples range in date from the Nara Period (710-793) to the present day. Each sample, which has been carefully authenticated, bears a complete description about its general type and method of manufacture.

Vol. III. The Contemporary Collection.
A volume of whole-page samples of 139 different papers from 18 Perfectures and the city of Kyoto—a representative cross section of handmade papers now being produced in the various districts under present-day conditions. The name, materials, place of manufacture, and use of each paper is given.

Vol. IV. The Watermark Collection.
A portfolio of 20 of the most modern Japanese watermarks made in the mills of the Government Printing Agency at Oji and Saidaiji. The process of hand rubbing by which these transparencies are made is described in Volume I. These exquisite samples contain elaborate landscapes and seascapes, Noh drama masks, flowers, fruit, Japanese women in native costumes and other characteristic designs. The watermarks, which have been laid in loose so they may be easily examined and exhibited, are done on specially-made colored papers. They are accompanied with a two-page introduction and a three-page descriptive catalogue.

The Fibres Envelope, containing labeled specimens of the five different fibres which are used in Japanese paper making.

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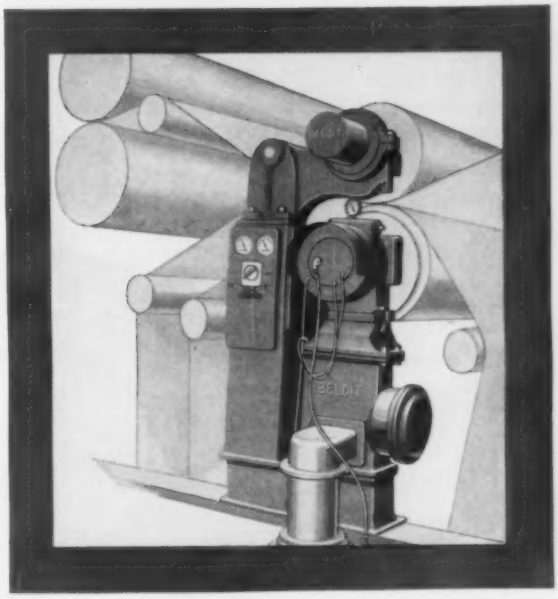
ONE OF A SERIES SHOWING TYPICAL BELOIT SOLUTIONS TO COMMON MILL PROBLEMS



Beloit air bleed suction press

• Speed limited by drying capacity?
• Sheet rewetting a problem?

Beloit Air Bleed Press can increase output over 20%

Easily and economically installed at the second or third press position, the air bleed press (a Beloit "first") brings you the advantages of higher output . . . increased nip pressures . . . cleaner felts . . . and, most important, an end to sheet rewetting. Let Beloit design and building experience help you modernize that obsolete press section.

» ACT! *Write for facts—or let a Beloit Engineer show you the advantages of the Beloit air bleed press. Write to Beloit Iron Works, Beloit, Wis.*

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PAPER MACHINERY
your partner in papermaking

first things first

How well we keep the world's *peace* depends first on how well we keep the world's *people.*

If great injustices, if inequalities in health, food or education exist anywhere...we all face a constant threat to peace.

Now 19 Specialized United Nations agencies and international organizations work around the world to eliminate these inequalities, to diminish these basic causes of wars.

Their activities...plus the more publicized political discussions...make the United Nations *mankind's last great instrument of survival.*

Be an ambassador of the United Nations in your neighborhood. Our government—officially and actively—supports the United Nations, but it is *your* good will and understanding that is its best guarantee of continued success. To receive the informative free pamphlet, "The UN in Action," write: United States Committee for the United Nations, Box 1958, Washington 13, D. C.

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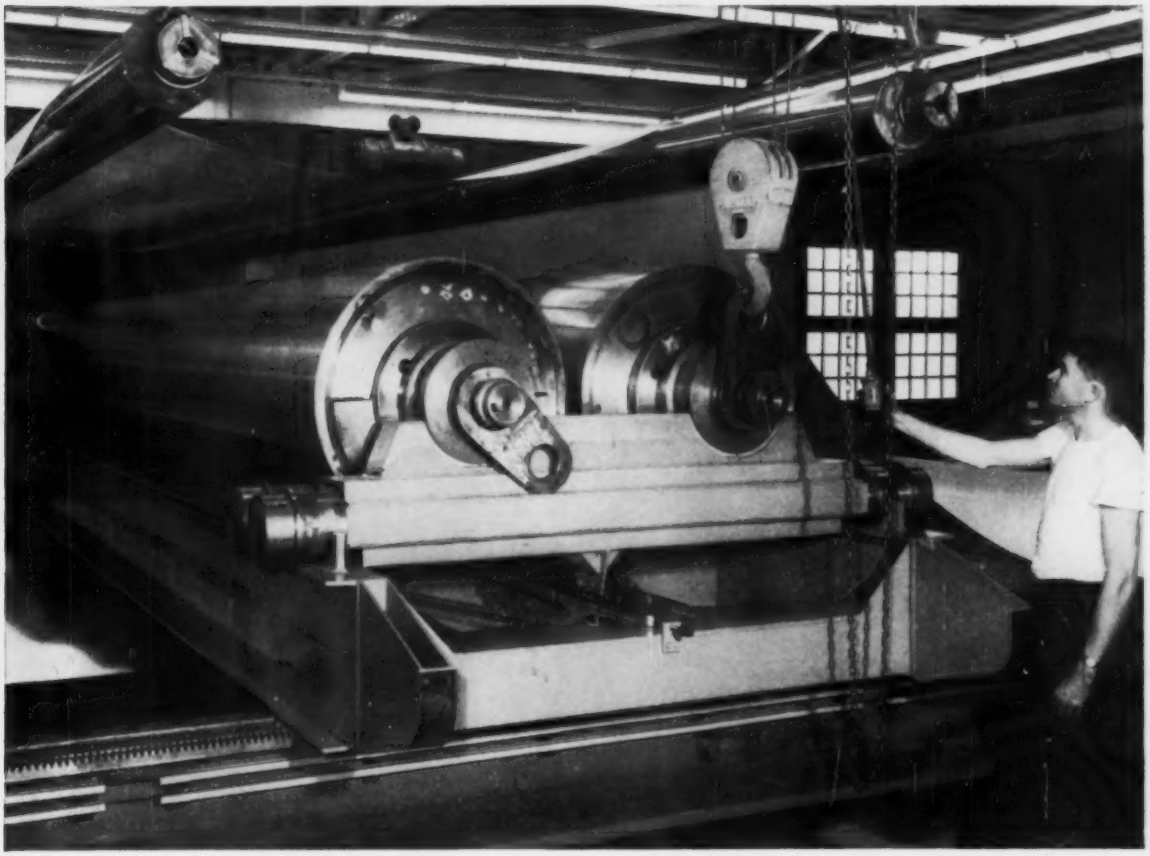
UNITED STATES COMMITTEE FOR THE UNITED NATIONS, BOX 1958, WASHINGTON 13, D.C.

An Appleton wire is about to receive its final inspection. These two gleaming cylinders simulating the breast and couch rolls of a paper machine are automatically positioned. The great belt of wire cloth will be revolved on these rolls, conformed to a predetermined length, meticulously inspected . . . then painstakingly packed for shipment. This careful attention to detail is among the many good reasons why scores of mills choose AWW as their major source of Fourdrinier wire cloth. We invite you to call your Appleton Wire Works representative to learn how our modern equipment and experienced men can best serve you.



APPLETON WIRES ARE GOOD WIRES

Appleton Wire Works, Inc. Plants at Appleton, Wis. and Montgomery, Ala. International Wire Works, Menasha, Wis.

Gates Rubber Co., Nashville, Tenn. Delbert L. Peterson, who has been with the Gates Co. at its parent plant in Denver for twenty years, is now general manager. The superintendent is C. William Gish.

U. S. Industrial Chemicals Co., Division of National Distillers and Chemical Corp. Ralph M. Knight has been named manager of Polyolefin Planning and Applications. In his new position, Mr. Knight will be responsible for long-range planning coordination of U.S.I.'s polymer development program. He will also direct the company's Polymer Service Laboratories located at Tuscola, Ill.

Wilco Machine Works, Inc., of Memphis, Tennessee, announces plans to construct a number of new Dorr-Oliver designed flakeboard production plants for sale to prospective producers. To be offered for purchase upon completion, the proposed plants will be located in Michigan, Southern Indiana, Northern Florida and New England, near to both markets and sources of raw material.

This announcement of plans to build operating, commercial plants for purchase follows an agreement recently concluded by which Wilco becomes the exclusive Dorr-Oliver representative in the U. S. for marketing of D-O designed and engineered flakeboard plants.

Wilco Machine Works is headed by Richard O. Wilson and Daniel N. Copp. On January 6 Mr. Copp announced the sale of United Wood Corp., a flakeboard plant at West Memphis, Arkansas, to the Weyerhaeuser Co., Tacoma, Wash. Mr. Copp was president of United Wood Corp.

B. F. Goodrich Chemical Co. Thomas B. Nantz has been named vice president of manufacturing, according to John R. Hoover, president of the chemical firm.

Formerly general manager of plants, Mr. Nantz succeeds Robert D. Scott, who was recently appointed vice president of development.

Mr. Nantz joined The B. F. Goodrich Co. as a chemist in 1937 after receiving a B.S. degree in industrial chemistry from the University of Kentucky.

Infilco Inc., of Tuscon, Ariz. announces the appointment of Allen I. Barry as sales representative in all the New England states except Connecticut. His headquarters will be in Milton, Mass.

Mr. Barry, a graduate of Rensselaer Polytechnic Institute and member of the Pollution Control Engineering Committee of the A.I.C.E., was formerly associated with Badger Mfg. Co. He has also been active in the application of flotation equipment to the treatment of industrial waste.

American Cyanamid Co., F. L. Pepper has been named western district manager for American Cyanamid Co.'s dyes department and W. L. Shaw has been appointed assistant district manager, it has been announced by J. L. Maylor, dyes department manager. Mr. Pepper has been with Cyanamid since 1932, when he joined the company as a chemist. Since then he has served in various technical service and sales capacities with the dyes department. Mr. Shaw joined Cyanamid's Bound Brook, N. J. plant in 1931. He has also held many technical service and sales positions with the dyes department, serving the paper industry. Prior to joining Cyanamid he was associated with American Aniline Products Co., and Heller & Merz Co. Their headquarters will be located at 3505 N. Kimball Ave., Chicago, Ill.

VOITH STOCK INLET
OF UNSURPASSED PRACTICAL DESIGN

Fitted with compressed air control, cross current distributor, overflow for foam and floating matter, this inlet is designed for paper-making speeds up to 2950 ft/min and guarantees:

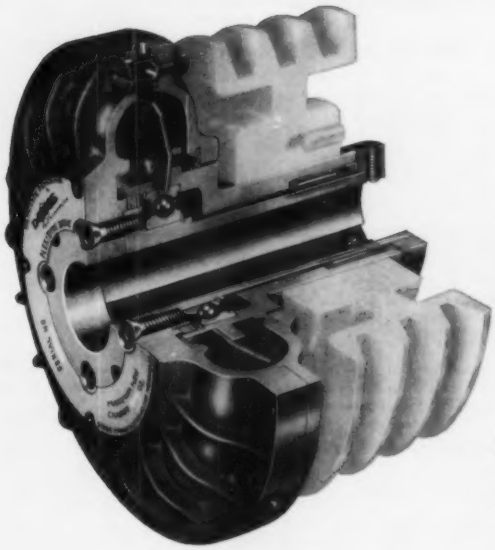
uniform substance,
sensitive and exact adjustment,
operation for days without re-adjustment,
optimum opacity of paper

24 STOCK INLETS 98 to 240 inches wide under construction

J. M. VOITH GMBH · HEIDENHEIM (BRENZ) · GERMANY

WHAT'S YOUR PROBLEM?...

- ☑ Overheated motors?
- ☑ Excessive belt maintenance?
- ☑ Breakage of materials being processed —like thread, wire, paper?
- ☑ Expense of oversize or high torque motors?
- ☑ High demand rate?
- ☑ Expense of reduced voltage starters?
- ☑ Clutch trouble?
- ☑ Breakage of transmission parts due to instantaneous shock loads?
- ☑ Damage and recurring down-time from overloads?



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THE DRY FLUID DRIVE

It is no longer necessary to accept the destructiveness—the costliness—of conventional starting in the mechanical transmission of power. Flexidyne changes that!

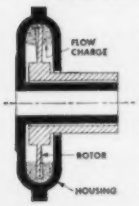
Flexidyne is the new way to start loads *smoothly*—to protect against shock and overload—to save power—all *without any sacrifice of efficiency at full load!*

This revolutionary development is ushering in "the day of the soft start"—which can mean thousands of dollars to you in equipment savings and in better, more economical operation.

Flexidyne is available, off the shelf, in Drives and Couplings. Capacities range from fractional to 1,000 hp. Ask your local Dodge Distributor or write us for technical bulletin.

DODGE MANUFACTURING CORPORATION, 2900 Union St., Mishawaka, Ind.

HOW FLEXIDYNE WORKS



The "dry fluid" in Flexidyne is tiny heat-treated steel shot. A measured amount, called the "flow charge," is contained in the housing, which is keyed to the motor shaft. Inside the housing is a rotor, free to revolve relative to the housing, but connected to the load.

When the motor is started, centrifugal force throws the flow charge to the perimeter of the housing, packing it between the housing and the rotor, which transmits power to the load. Initial slippage is momentary. Housing and rotor become locked together and achieve full load speed without slip and at 100% efficiency.

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	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$ 82.50/ 90.00	‡$90.00/ —	‡$80.00/ —	‡$90.00/ —
Bleached Gw'd	$ 97.50/100.00	$ 97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	$157.00/162.50*		$157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		$137.00/ —		
Kraft, Semi-bleached	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

‡ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED JAN. 26

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	$ — /7.25	7.75/7.50
3	$8.00/7.00	$7.00/6.50	7.00/6.50	7.25/7.00
4	7.00/5.75	6.00/5.75	6.25/5.75	6.75/6.25
5	5.75/5.00	5.25/5.00	5.50/5.00	6.00/5.50
6	5.00/4.00	4.50/4.25	4.50/4.25	4.75/4.25
7	4.00/3.00	3.50/3.25	4.00/3.00	3.00/2.75

WASTE PAPER MARKET

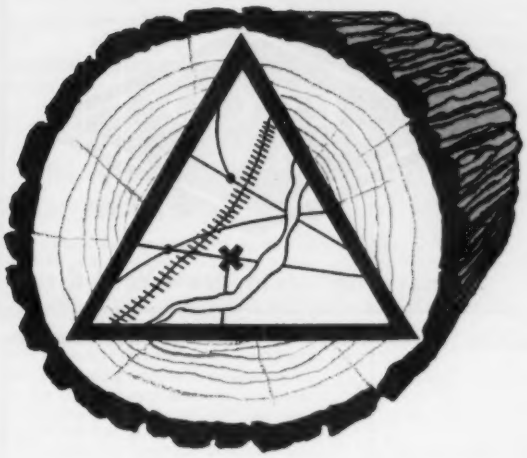
Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

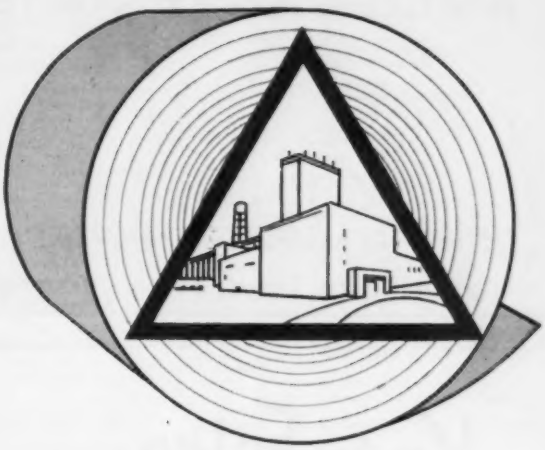
These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Jan. 26	Jan. 26	Jan.	Jan.
No. 1 Mixed Paper	$10.00/ 11.00	10.00/ 12.00	9.00/ —	14.00/ 15.00
No. 1 News	17.00/ 18.00	18.00/ 19.00	25.00/ —	17.00/ 18.00
Overissue News (Lg. size)	16.00/ 18.00	15.00/ 17.00	30.00/ —	20.00/ 22.00
Mill Wrappers	19.00/ 22.00	16.00/ 18.00	12.00/ —	15.00/ —
Old Corrugated Containers	24.00/ 25.00	23.50/ 24.00	25.00/ —	25.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	35.00/ 40.00	35.00/ —	55.00/ 57.50
New Double Kr. Ld. Corr. Cuts	35.00/ 37.50	37.50/ —	37.50/ —	35.00/ 37.00
(Semi-chem. medium)	47.50/ 50.00	45.00/ 50.00	45.00/ 50.00	35.00/ 36.00
New 100% Kraft Corr. Cuts	40.00/ 42.50	50.00/ 55.00	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ 57.00
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ 58.00
New Br. Kr. Bag Waste Unprintd	60.00/ 65.00	65.00/ 75.00	62.50/ —	58.00/ 60.00
No. 1 Groundwood Shvs.	25.00/ 30.00	22.50/ 27.50	27.00/ —	30.00/ 37.50
White Newsblanks	60.00/ 65.00	50.00/ 57.50	45.00/ —	55.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	55.00/ —	67.00/ 70.00
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	65.00/ —	— / —
Hd. White Shvs.	90.00/ 95.00	95.00/105.00	85.00/ —	95.00/ 97.00
Hd. White Env. Cuts	105.00/110.00	110.00/115.00	90.00/ —	113.00/ —
Col. Tab. Cards	50.00/ 60.00	55.00/ 62.00	52.50/ —	38.00/ 40.00
Manila Tab. Cards	75.00/ 80.00	80.00/ 85.00	75.00/ —	65.00/ —
No. 1 Col. Ledger	32.50/ 37.50	25.00/ 30.00	45.00/ —	29.00/ 30.00
White Ledger	60.00/ 62.50	6.00/ 65.00	57.50/ —	50.00/ 55.00
Mixed Book & Mag.†	20.00/ 23.00	18.00/ 20.00	14.50/ —	— / —
No. 1 Books‡	25.00/ 30.00	20.00/ 22.00	32.50/ —	16.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

FROM SITE SELECTION TO PAPER PRODUCTION





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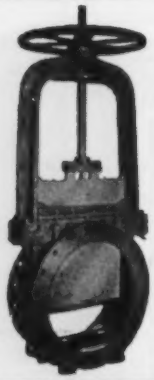

RECORD PAPER & PULP STOCK VALVES "BONNETLESS"
SELF CLEARING---"RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M. all iron, bronze or stainless steels, body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

- **The "FAST THREADED" screw stem and ball bearing speeds valve operation.**
- **The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.**
- **The yoke mountings are such that yokes for various methods of gate operation are interchangeable.**
- **Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.**

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Midwestern pulp and specialty paper mill requires the services of a young technical graduate with 2-4 years mill experience to carry out an intensive development program. Knowledge of specialty pulps and papers helpful. Excellent opportunity for advancement to Technical Director. Submit complete resume of education, experience, and salary expected. Address Box 59-42 care Paper Trade Journal.

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Offering a Comprehensive and Confidential Placement Service to Employers and Employees in the Pulp, Paper, Converting and related Industries

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F-2

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Our Technical Department is looking for a man to head the machine coating program in our paper mill. This mill is producing a variety of Fourdrinier bleached boards and specialties. Basic knowledge and experience with clay coating and ability to lead a program in developing coating processes and new types of functional coatings are required. This is an outstanding opportunity for the right man.

Personnel Department

Riegel Paper Corporation

Carolina Division

Acme, North Carolina

F-16

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SALES, ENGINEERING & SERVICE

As designers, builders and rebuilders of complete paper making machines of all types, as well as component parts, we are the fastest growing company in our field. A new plant, doubling our capacity, is now under construction.

We now have openings for two regional managers who will be permanently located in paper making areas. To apply you should be over 30, with at least five years experience in the industry.

This is a wonderful opportunity to grow with a live-wire company serving one of the soundest industries in the nation and to locate your family in an area of your choice. Salary is open and fringe benefits including profit sharing are unusual.

Please give full details of your personal qualifications, experience, and salary requirements in your first letter. We will make no reference checks without your permission and all correspondence will be held strictly confidential. Please reply to:

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Supervisor, Industrial Relations

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1—65" 6-color Kidder Master Anilinor
1—54" 1-color Rotogravure Press
1—49" 1-color Rotogravure Press
1—42" 4-color Kidder Std. Anilinor
1—40" 4-color Hudson Sharp Flexo, Roll to Sheets
1—36" 5-color Wolverine Hydro Press
1—36" 2-color Champlain Gravure Press
1—36" 5-color Koenig & Bauer Rotogravure
2—33" 6-color Cottrell-Helarich Flexo Presses
1—36" 3-color A.T.F. Flexo Press
2—30" 4-color H-S Flexo Presses, 1 with Gravure Station
1—24" 5-color Kidder Colloprinter
1—18" 2-color Potdevin (Model-217) Roll to Roll Press
3—New Era Presses;—6" x 6", 9" x 12" and 12" x 12"

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Seybolds: 1—44" late model Seybold Model P4460 New 1952
Precision: 40", 50", 57" & 64"; 10Z: 40", 57" & 65"; 20th Century: 45", 54" & 60"; Dayton (6Z): 35", 40" & 84"; Holyoke: 65"; Sheridan: 36" new model, 55"; Oswegos: 38" & 44" & 34", 54" Heavy Duty; Lawson: 52" Auto Space & 52" Standard

CAMACHINES

1—72" 26-3A Cameron
1—72" 10-04 Shear Cut
1—72" 10-10A
1—72" 10-5
1—66" & 2—52" 9-5
1—62" 10-10
1—62" 10-5
1—62" 26-2A with 100 score cutting units
1—62" 40-1-AF
1—52", & 1—42" Model 24-7
1—42" Type 9-5-A Roller Bearing 1500 fpm
1—42", 50" & 62" Type 6

OTHER SLITTERS

1—82" Langston Type B
1—60" Langston Type A
1—50" Kidder Junior Model Superspeed (IBM Type Tab Card Slitter)
1—45" Ruf Duplex Winder
1—42" Kidder Merchant Model
30" Foles Model B Slitter and Rewinder
2—24", 1—30", 1—36" & 1—40" Kidder S.L. Shear cut

MISCELLANEOUS MACHINES

1—46" Reverse Roll Coater
1—48" Hot Melt Coater and Laminator
1—40" and 1—48" Asphalt Laminators
1—60" Hot Melt Coaters & laminators
1—90" Duplex Hamblet, Layboy and Back Stands
10—Hamblet Sheeters 32", 42", 45", 50", 62", 68", 72", 84", 90" and 104"
1—30" Peters Sheeter, Model UD
1—45" Beck Auto-Piler
4—Schultz continuous roll winders. Two—12", One 18" and 1—24"
1—24" Shultz Rewinder with wrapping attachment
1—Goins Garment Bag Machine
1—Potdevin (Model 111-S) F & S Cello Bag Machine, Electric Eye
1—Potdevin Model 224 Garment Bag Machine, 2 color printing, large range
1—Potdevin Model 72-C Cellophane satchel bottom bag machine
1—Potdevin Model 296 Duplex Coffee Bag Machine
1—Weber Model "CN" Cellophane Satchel Bottom Bag Machine
1—Simplex Model 4-7 Cellophane Bag Machine
Die Presses: 1—40" x 14" Seeley, 1—50" x 33" Sheridan, 2—37" x 18" Sheridans
1—2 Web ¼ fold 13½" x 13½" Napkin Machine with Printing & Embossing
1—9-roll Holyoke Super Calender with drive
3—Waldron Gummed Paper Breakers 50", 56" & 64"
1—Hayssen Model 5-9 Cellophane Wrapper
1—50" Hudson Sharp Embosser-tinter
1—48" Unicraft Embosser
1—18" Waldron Embosser
1—30" Double Reverse Roll Coater
1—Vierengel Tin Tie Machine

F-2

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GRADUATE ENGINEER WITH EXPERIENCE COMPETENT TO TAKE CHARGE OF 5,000 KW DOUBLE EXTRACTION STEAM TURBINE PLANT, 120 TON RECOVERY UNIT AND AUXILIARY POWER EQUIPMENT IN NEW PULP AND PAPER MILL IN OPERATION IN CUBA NEAR BEAUTIFUL VARADERO BEACH, AMERICAN COLONY AND SCHOOLS. TAKE HOME SALARY MUCH HIGHER THAN U. S. RATES, WITH ONE MONTH YEARLY PAID VACATION. GUARANTEED FREE FROM U. S. AND CUBAN TAXES. PLEASE SUBMIT COMPLETE CHRONOLOGICAL DETAILS OF BIRTH, TRAINING AND EXPERIENCE. ALSO PLEASE BE SURE TO STATE SALARY ACTUALLY DESIRED AND TELEPHONE NUMBER. REPLY WILL BE HELD STRICTLY CONFIDENTIAL. ADDRESS POST OFFICE BOX 2929, CARDENAS, CUBA. F-9

PROJECT ENGINEER

Our expanding Engineering Department has an outstanding opportunity for an experienced man. The opening requires a man who has a degree in Mechanical Engineering or equivalent. He must have 3 to 5 years paper mill experience or 7 to 8 years experience in the manufacture of paper mill machinery. He must be a man who can step in and assume responsibility for process studies, design and development work.

Salary open. Excellent Benefit Program plus successful Profit Sharing Plan available. Your inquiry, with detailed resume and salary requirements, will receive immediate and confidential attention.

WRITE
Mr. John A. Burton, Personnel Manager
C. H. Dexter & Sons, Inc.
Windsor Locks, Connecticut F-9

WANTED

CONVERTING FOREMAN

Old established company with progressive young management, requires immediately, capable man with experience, to take complete charge of Paper Finishing.

Knowledge and experience with paper cutting, trimming and rewinding absolutely necessary.

Also must have prior experience with scheduling, production and warehousing.

Eastern Metropolitan Area.

Minimum age 35.

Address Box 59-30 care Paper Trade Journal. F-2

WANTED—Plant Engineer to take complete charge of construction and maintenance in integrated West Coast pulp and paper mill. Address Box 59-28 care Paper Trade Journal. F-9

Help Wanted

WANTED

MANUFACTURERS REPRESENTATIVE

Unusual sales opportunity for salesmen calling on converters operating rotogravure printing, coating and laminating equipment for paper, film, foil, board, packaging and plastics. Sell engraved cylinders for a well known company of high reputation. Increase your income by representing us in your regular territory, on a protected basis. We will help you develop accounts. We require consistent personal calls. Replies will be held confidential, of course. Send complete resume, including photograph, to Box 59-52 care Paper Trade Journal. F-2

PAPER SALESMEN

EAST COAST JOB LOT CONVERTER NEEDS EXEC. TYPE SALESMEN WITH COARSE AND FINE PAPER EXPERIENCE.

SALARY—SEND RESUME. ADDRESS BOX 59-41 CARE PAPER TRADE JOURNAL. F-2

Position Open
As
Ass't. Plant Engineer

In a large Board Mill located in Mich. Experience in cylinder machine and converting operations desirable. Under 40 years of age. Salary commensurate with experience. Submit complete resume to Box 59-50 care Paper Trade Journal. F-16

RESEARCH CHEMICAL ENGINEER

Research Chemical Engineer for research and development in paper and new products. Advanced Degree desirable. Experience in paper essential. Salary commensurate with education and experience. Southeast location. Please send all experience in first resume to Box 59-24 care Paper Trade Journal. F-2

PAPER MILL SUP'T.

Take full charge of 1 Yankee Fourdrinier machine running facial tissue. Must have experience. Reply stating experience, age and salary expected to Box 59-27 care Paper Trade Journal. F-2

BARGAINS

IMMEDIATE DELIVERY

1—128" B & S 10-Roll Calender Stack. King Roll 24" Dia. Heavy box frames, full set of doctors. Excellent Condition.
1—86" Farrel 8-Roll Calender Stack. Anti-friction Bearings. Excellent Condition.
26—36" x 72" Complete Dryer Section, Stock, Drives, Etc.
10—48" x 180" Pusey & Jones Dryers.
1—84" Kamyr Machine, Complete. 75 ton per day output.
1—E. D. Jones Majestic Jordan No. A-482. New S.S. Fillings. Like New.
1—E. D. Jones Imperial Jordan, S.S. Fillings
1—Noble & Wood Mammoth Jr. Jordan, S.S. Fillings
1—Monarch Jordan, Model SP, Serial #21095, no fillings. Direct connected to a 75 H.P. G.E. 400 RPM Motor.
1—No. 3 Jones Pulpmaster, Late Type. Complete Drive.
1—Dilts #1 Hydrafiner, Anti-friction Bearings.
1—45" Seybold-Dayton Trimmer and Cutter with 5 H.P. 220/440 Volt Motor.
1—A.P.P. Rotary Centrifugal Pulp Screen, 40" Dia. x 42" Face. Serial #1274227. Like new. Capable of 40 ton groundwood pulp per day.
1—Trimbey Senior Rotary Screen.
2—Impco Rotary Pulp Screens.
3—No. 3 Impco Rotary Knotter Screens. S.S. Plates.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—Hudson Sharpe Toilet Tissue Converting Machine. Ser. #2123. 8 Spare Mandrel Bars.
1—42" Dia. x 110" Face Pope Type Reel. Excellent Condition.
1—25" Dia. x 156" Face Sandusky Suction Couch, Bearings & Stands.
1—22" Dia. x 138" Perforated Face Sandusky Suction Couch, Bearings & Stands.
1—10-Knife Carthage Chipper with Anti-friction Bearings.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—Dilts 53" Dia. x 60" Face—2000 lb. Iron Tub Beater. S.S. Extractor Type Hood.
1—Seybold Knife Grinder. Size G. 84" Table. Serial #4X802.
1—Sandy Hill Sulphur Burner. Complete.
2—#2 Bird Screens with Copper Vats & S.S. Plates.
1—Tugboat Annie Pulper.
1—Worthington Air Compressor, Model 5T82, 2-Stage, Air Cooled. 5 H.P.
1—C.P. 12 x 10 Air Compressor, 100# Pressure.
1—I.R. 7 x 7 Air Compressor. 100# Pressure.
1—No. 244 Mattison 18" Core Cutting Saw—5 H.P. 3450 RPM, 3/60/220-440 volt.
1—90 H.P. Terry Turbine. Type G-4000/1000 RPM. For Paper Machine Drive. Complete.
1—No. 2 Jones Pulper. A.F. Bearings. Spare Worm.
1—36" Putman H.D. Lathe—15' Centers.
1—24" x 6' L & S Geared Head, H.D. Machine Lathe. Taper Attachment, Hollow Spindle, Motorized.
1—A.C. 75 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—A.C. 60 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—G.E. 100 H.P. MG Set, 250 Volt D.C.
1—250 H.P. Ingersoll Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.

Save over 50% on your requirements for New Jordan Fillings. S.S., Bronze & Carbon Steel.

Gear Reducers, P.I.V. Drives, Generators, B.B. Pumps, Stock Pumps, Plunger Pumps, Etc.

1000 Electric Motors from ¼ H.P. to 400 H.P. In Stock.

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

Write—Wire—Phone For Your Needs

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
Telephone 333-334
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FOR SALE

BEATERS
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54" x 48", cast iron tubs

CALENDER STACKS
1—3 roll 84" calender stack.
1—4 roll 72" Calender Stack. (Extra heavy duty).
1—5 roll 82" face.
1—5 roll 86".
1—7 roll, 84" face.

CHIPPERS
1—96" Murray 4 knife Chipper—anti-friction bearings.
1—84" 10 knife Carthage Chipper. Anti-friction bearings.
24—Chipper Knives 15⅜ x 8¼, 2 slot.

CRUSHER & HAMMERMILL
1—Jeffrey Shredder
1—Murray Chip Crusher.
1—Williams Hammermill

CYLINDER MOLDS
2—42" diameter x 106" face
7—36" diameter x 94" face, hollow shafts, Very good condition.
1—30" diameter x 72" face.
1—30" diameter x 92" face.
1—36" diameter x 84" face
2—36" diameter x 82" face
2—36" dia. x 54" face.
3—36" diameter x 90" face, 18" diameter couch rolls.
1—60" dia. x 170" face.

DIGESTERS
1—Bigga 12' 6". (Globe)
1—10' high x 5' dia. High pressure vertical digester.

DISINTEGRATOR
1—Shartle 8" disintegrator (new) with 125 horsepower induction motor (totally enclosed)

DRIVES
1—Rice-Barton hypoid enclosed drive, 4 to 1 ratio.
1—#6 Reeves vertical—anti friction bearings, totally enclosed.
1—Sandy Hill right angle 50 H.P. (4.75 to 1).
1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)
1—Beloit hypoid enclosed drive 60 h.p. 5 to 1 ratio.
1—5 H.P. Reliance Drive, complete with starting equipment, like new.
1—20 H. P. U. S. Varidrive
1—Agitator drive

DRYERS
1—28" diameter x 84" face
2—30" diameter x 40" face with bearings
2—30" diameter x 48" face with bearings.
4—48" dia. x 52" face with frames, gears, bearings
1—36" diameter x 44" face
3—36" diameter x 76" face.
5—36" diameter x 84" face, anti friction bearings and gears.
1—16" diameter x 54" face (steel)
6—48" diameter x 130" face.
2—Cooling Drums, bronze 36" x 128", with frames, gears & necessary rolls to make up the unit. (After dryers)

EMBOSSING CALENDERS
1—43" 3-Roll Embossing Calender.
1—62" 2 roll Embosser.

EXTRACTOR ROLLS
1—Extractor roll, 26" diameter x 104" face
1—Rice Barton & Fales, Extractor Roll, 26" diameter x 104" face

FELT ROLLS
50—Brass Felt Rolls, with Brass Journals, 72" face x 5" dia.

FLAT SCREENS
1—8 Plate "Packer"
1—12 Plate "Packer"

HOGS
2—Mitts Merrill Type 15 C.F.

FOR SALE

JORDANS
1—Noble & Wood Mammoth
1—Noble & Wood Monarch, Type D.

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1—Bauer-McNett Fibre Classifier
1—16" diameter x 24" Face
1—Press Roll 6" diameter 24" Face, steam jacketted
1—2' Shartle Hydrapulper
2—8" x 8" Valley Sheet dryers
1—12" x 12" Valley Sheet dryer
1—6" diameter Hydraulic Press
1—Experimental Digester (High Pressure)
1—15 lb. E. D. Jones Beater
3—Jonsson Test Screens
1—8" x 8" Williams Sheet Mold
2—8" x 8" Valley Hydraulic Presses
1—6" Mayer Coater.
1—Clark Softness & Stiffness Tester
1—20" Dilts Wet Machine
1—Williams Centrifuge
1—10" Butterworth Padder.
1—Williams Freeness tester, complete
1—Thwing Albert tinsile tester
1—Gurley Densometer Model 4110

LAMINATING MACHINES
2—84" Asphalt laminators.

MISCELLANEOUS
1—#1 Miami Selectrap

MOTORS
1—100 H.P. Westinghouse Motor, variable speed, 585 r.p.m.

PRESS ROLLS
2—Chilled iron, chrome plated 9" x 72"
1—Chilled iron, chrome plated 12" x 100"
1—Chilled iron, chrome plated 10" x 74"
8—sets (1 rubber, 1 chrome steel) 74" face x 15" dia., complete with bearings.

PRESS SECTIONS
2—Complete Press Sections with (frames, gears, bearings), 18" diameter x 90" face rolls (1 rubber, 1 bronze & 1 rubber, Stonite). Also 2 extra brand new rubber covered rolls.

PULPERS
4—Dyno-Pulpers

PUMP
1—Morris-10,000 g.p.m. 25 ft. head (all bronze)

REELS
1—86" 2 bowl reel.
1—84" 3 bowl revolving reel.
1—100" Rice Barton 2 bowl Reel, heavy duty.
1—123" 3 bowl Revolving Reel
1—134" 2 drum
1—72" Downingtown Reel, 2 bowl.

REFINERS
1—Dilts Classifiner, practically new
1—Rice Barton Dynofiner, details on request.
1—Dilts, Hydrafiner, stainless steel filling, anti-friction bearings, excellent condition, including 125 h.p. motor
1—12" Wiener Refiner, with 200 h.p. motor

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1—Trimbey Consistency Regulator

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—#2A-50 Bird, copper vat.
2—APMEW Rotary Pulp Screens.

SAVEALLS
1—LaMorte, 48" diameter x 82" face cylinder mold.
2—Savealls, cylinder molds, 42" diameter x 106" face, brand new vats.

SCREEN PLATES
Bird Rotary screen plates.

SHEETER
1—132" Hamblet heavy duty duplex sheeter, anti-friction bearings throughout, including layboy and backstand.
1—84" Hamblet, duplex, back stands.

SHREDDER
1—16" "Swift" Paper Shredder

FOR SALE

SLITTERS & WINDERS
1—32" Cameron Type 28-8-3, shear cut duplex, 30" rewind, constant tension and variable speed motor drive, practically new condition. Will lengthen up to 72" wide.
1—32" Cameron Type 9
4—42" Cameron Type 6
1—42" Cameron Type 26-2A
3—50" Cameron Type 6
1—52" Cameron Type 9
2—62" Cameron Type 6
1—72" Cameron Type 9
1—84" Cameron Type 12
1—86" Two Drum Moore & White 50" diameter rewind.
1—96" 4-drum Moore & White winder
1—128" Beloit Shear cut winder, drive and variable speed motor.
1—102" Cameron Type 18, 60" diameter
1—122" Cameron Type 18, 60" diameter, anti-friction bearings
1—136" Langston, 60" diameter

SLITTING DEVICE
84" Quick change slitting device shear cut, complete, practically new.

STOCK PUMP
1—10 x 20 Shartle Triplex

STRAINER
1—Elliott Twin Strainer, Type R

SUCTION COUCH SHELL
1—Downingtown suction couch shell only, 127½" face x 26" diameter

SUCTION COUCH ROLL
1—Beloit, 36" diameter x 246" face, SKF bearings.

SUCTION FELT ROLLS
1—Gilbert & Nash 122" face
1—Beloit Rubber Covered Suction Felt Roll 109 face x 20½" diameter.

SUCTION PRESS SHELL
1—14" diameter x 100" drilled face, suction Press Shell only.

SUPER CALENDER STACK
1—9 Roll 56"

TABLE ROLLS
22—Rubber Covered 10" diameter x 246" face
30—4" dia. x 130" face (will cut to size)

THICKENERS
2—Iron End Vats with 36" diameter x 84" face Cylinder Molds and 20" diameter couch rolls, including spare cylinder mold and spare couch roll, all anti friction bearing equipped.

TOILET WINDERS
2—72" Hudson-Sharp (Surface type winder)

TRIMMER
1—84" Seybold

VACUUM PUMPS
1—H-3 Nash Vacuum Pump
3—#1 Nash Hytor vacuum pumps
1—#7 Nash Hytor vacuum pump with 75 h.p. synchronous motor.
2—Connersville, 14 x 20
2—#3 Nash Hytor
1—#4 Nash, with motor
3—L-5 Nash Vacuum Pumps
1—L-6 Nash Vacuum Pump

VATS
2—D. J. Murray Co. Vats, iron ends, for 42" x 120" cylinder molds, overflow and counterflow.
2—Brand new Downingtown Iron End Vats, copper lined, for 42" diameter x 112" face cylinder molds. Will cut down to your size.

VIBRATING SCREENS
1—Hummer electric Vibrating Screens, stainless steel
1—Selectro 2 stage, 5 ft. x 10 ft.
1—36" x 48" Vibrating Screen

WEB GUIDE
1—110" Stanford Constant Tension Unit, air operated.

YANKEE DRYER
1—84" diameter x 56" face.

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PAPER CONVERTING MACHINERY DESIGNER

Wanted by manufacturer of paper and film bag machinery and printing presses.

Located in pleasant New Jersey community.

Degree not necessary—only the ability and practical background for independent design of converting machinery.

Excellent opportunity for capable man. Salary open.

Please send resume of experience. Box 58-13 care Paper Trade Journal.

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SENIOR PROJECT ASSISTANT

Technical man for staff position involving close work with operating departments as well as opportunity to contribute to the development of new and improved processes and products. Large modern Midwestern pulp and paper mill manufacturing paperboard, bleached kraft food board and specialties. Industry experience necessary. Sound educational background, including advanced degree, desirable. Send resume to Box 59-47 care Paper Trade Journal. F-2

PLANT ENGINEER WANTED

Graduate Mechanical Engineer experienced in paper converting and methods and job standards. Send resume of education, experience and salary thinking to Box 59-49 care Paper Trade Journal. F-23

GENERAL MILL SUPERINTENDENT OR PRODUCTION MANAGER

With experience in fine Printing Papers and specialties—Middle Atlantic location—attractive salary—applications strictly confidential.

Address Box 58-329 care Paper Trade Journal. F-2

SALESMAN WITH ESTABLISHED FOLLOWING IN INDUSTRIAL PACKAGING ITEMS SUCH AS CORRUGATED BOXES, CUSHIONING MATERIALS, MILITARY PACKAGING FOR PROGRESSIVE GROWING JOBBER, MANUFACTURER. SEND RESUME. BOX 59-40 CARE PAPER TRADE JOURNAL. F-2

Situations Wanted

Mill Manager — General Supt.

Wide experience on Kraft-technical specialty & converter grades—publication & printing papers. Accustomed to high speed machines. Expert on maintenance & modernization. Presently manager large well known specialty mill. Engineering trained with years of practical experience. Cost conscious. Apply Box 59-32 care Paper Trade Journal. F-18

EXECUTIVE—Conversion of Boards and Papers. Currently Works Manager; desire change for challenging opportunity. Highly successful record in organization production and development. Address Box 59-9 care Paper Trade Journal. F-23

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Finishing and Shipping Consultant

If you have a Sheeting, Rewinding, packing, car loading or related problem in your finishing and shipping dept. Let me visit your mill and see if I can help solve the problem.

If you are building a new mill let me help you plan your Bin & Shipping Dept.

I have had 25 years experience in F & S in 7 different paper mills. The last eight years in the capacity of F & S supt. in 3 modern mills.

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Ph. Ev. 5-4135—Silshee, Texas

F-2

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UTILITIES ENGINEER, P.E., AGE 31, MECHANICAL ENGINEER WITH CHEMICAL ENGINEERING BACKGROUND EXPERIENCE IN DESIGN, START-UP AND OPERATING OF INDUSTRIAL AND UTILITY POWER PLANTS. WILLING TO TRAVEL AS REQUIRED. MINIMUM SALARY —$9,300/YR.

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Experienced papermaker in fine grades thru Kraft on fourdriniers. Capable administrator. Forceful. Energetic. Good at handling men. Knows all phases of labor relations. This man can do a job. Looking for a growth opportunity. B.S.—technical degree plus advanced degree. Would also consider overseas position. Multi-lingual. Address Box 59-45 care Paper Trade Journal. F-2

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SEEKING CONNECTION with aggressive company—20 years experience on cylinder machines, B.S. Degree—Technical and Production Supervision at management level. Presently employed in supervisory capacity. Address Box 59-5 care Paper Trade Journal. F-9

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COMPLETE MILL
FOR LEASE

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Complete with Stock Preparation Equipment and Modern Boiler.

Produced 15 tons of .009 Corrugating or .018 Chip Board per day.

All Machinery erected.

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Complete Reliance V & S Drive Equipment. M. G. Panel Set for 40 H.P., Frame 131-T, SN 2TH-10808-T1 input to Panel is 440 V., 3 Phase, 60 Cycle.
Individual Drum Drives, each Reliance Type T, heavy duty D. C. Motors, Frame 46-T, 15 H.P., 1750-2190 RPM, 230 V., 56.5 Amps, special shunt windings, SN'S R-32233-T1 & T2, thru Reliance Gear Reducers with 11.4-1 Ratios.
V-Belt Drive to Platen Roll thru 5.07-1 Reducer is a 10 H.P. Reliance D. C. Motor, 38 Amp, Shunt Wound, Frame 34-T, 230 Volts, 1750-2190 RPM, SN 1LH-10808-T1.

1—E. D. Jones Majestic Jordan (Ref: Bulletin EDJ-1007B) manufactured late 1957, Eng. #A-857, Lava Plug Filling, Bidwell Cast Liner Shell Filling, SKF Radial and Thrust Anti-friction Bearings, WT. 20,000 lbs.
complete with the following:
350 H.P. General Electric Synchronous Motor, Squirrel Cage Type, Ball Bearing, Drip-proof, for unity power factor, 360 RPM, 440 V., 3 Phase, 60 Cycle, A. C., 367 Armature Amps, 125 V Excitation, Frame 991Y, SN 8273481, manufactured late 1957 special for above Jordan.
Koppers Co. "Fast" Telescopic Type Flexible Coupling.
Complete G.E. Control Panel with Full Voltage Magnetic Starters and Heavy Duty Push-Button Stations. Mfr'd late 1957.
7.5 H.P. G-E Motor-Generator Set—Mfr'd late 1957.
Above Complete Unit-s Ready to Run.

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158' Jeffrey Paper Roll Conveyor w/2-15 HP A.C. motors
54" Hamblett 2 knife sheeter w/layboy
44", 50", 65" Seybold cutters

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1—90" Yankee Fourdrinier Machine. Equipped with Suction Press, Head Box, Voight Inlet.

1—6 Ft. Luken Steel Yankee Dryer—150# Test.

1—5 Ft. Moore & White Yankee Dryer.
The above two dryers are fully equipped with doctors, Honeywell speed indicators and air cylinders with Foxboro controls. All rolls (felt & wire) equipped with A.F. Bearings. Direct Motor Drives. Excellent Condition.

2—Collators.

1—#1 Claflin Refiner.

1—75 KW MG Set with Controls.

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3—Beaters.

2—Saveralls.

Many other items, including pumps, motors, laboratory equipment, etc.

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For Sale in the East

Tissue Paper Mill with 80" Fourdrinier Machine, Water Power, Railroad Siding and Highway. For further particulars address Box 59-46 care Paper Trade Journal. F-2

Wanted

WANTED

Will buy for cash—paper co. with tax loss over past three years. Strictly confidential.

Box 58-333 care Paper Trade Journal. TF

WANTED

20 Paper Machine Dryers

48" x 90 to 102"

Seaman Paper Company of Massachusetts, Inc.

P. O. Box 21

Baldwinville, Mass. F-2

Interested in buying used pulp and paper laboratory equipment such as beaters, freeness testers and various other instruments. Send itemized list, manufacturer and other specifications and price desired. Address Box 59-38 care Paper Trade Journal. F-9

WANTED—Two Jordans with 440 volt motors and starters complete; anti-friction bearings, if possible. Suitable for minimum of 15 tons per 24 hours. Address Box 59-36 care Paper Trade Journal. F-9

WANTED—Toilet Tissue—Jumbo Rolls in carload lots; bleached and unbleached. Submit samples with prices to Box 59-37 care Paper Trade Journal. F-9

Wanted

WANTED—Second hand Noble and Wood Mammoth Junior Type C Jordan. Plug must be suitable for 3/16" bar width. Address Box 59-44 care Paper Trade Journal. F-16

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Of Waste Paper Consuming Mills in a radius of 150 miles of New York City. We would like to sell all grades of Waste Paper and haul back your finished product on a contract basis.

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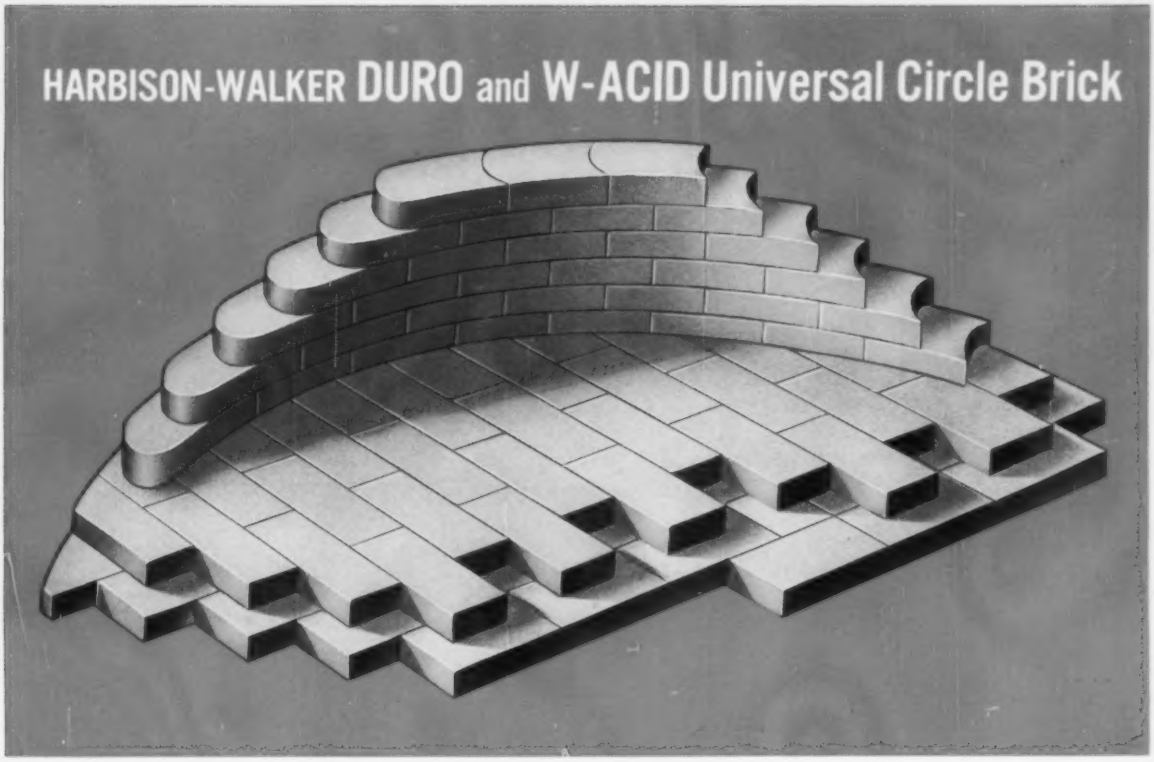

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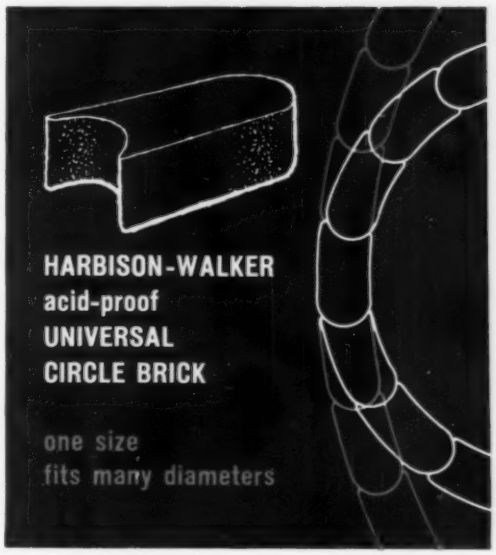

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